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ORIGINAL ARTICLES.

THE LIMITATIONS OF THE X-RAY IN THE TREATMENT OF MALIGNANT TUMORS.*

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BEFORE a recent meeting of the New York Surgical Society I attempted to state what had, thus far, been accomplished by the X-ray in cancer. At the request of your president I shall this evening try to describe very briefly its limitations.

My personal experience with the X-ray in the treatment of malignant tumors began in February, 1902. Since this date I have treated with the X-ray in private and have had under my direction at the General Memorial Hospital 75 patients suffering from various forms of malignant tumors. At the hospital the treatment has been carried out by Mr. W. P. Agnew and Dr. James Ogilvie.

These cases were all inoperable, and most of them recurrent after operation. Twenty-seven were sarcoma; 21 cancer of the breast (17 inoperable; in four the treatment was given immediately after operation as a prophylactic measure), ten deep-seated abdominal cancer (four of the uterus, one of bladder, two of rectum and sigmoid flexure, three intra-abdominal sarcoma); 16 were epithelioma of head, face and neck, one Hodgkin's disease.

Without going into details, my results have been briefly as follows:

Sarcoma Inoperable.—In five cases of inoperable round-celled sarcoma the tumors entirely disappeared under prolonged X-ray treatment, varying from four to ten months. In one of these cases, a very large multiple recurrent round-celled sarcoma involving the entire neck, pectoral and axillary regions, in which the tumors disappeared, there was, three months later, a local recurrence, the size of an English walnut in the parotid region with extensive metastatic growths in both groins and a large tumor the size of a grape fruit in the region of the ascending colon. The X-ray was resumed September 24 and under continued treatment the external tumors have all disappeared and the abdominal tumor has decreased to one-third its former size.

In a second case of very extensive inoperable recurrent round-celled sarcoma of the pectoral region and axilla, which had disappeared largely under the mixed toxins alone and entirely under the combined toxin and X-ray treatment, there has been a slight local recurrence after the patient had remained well for four months.

In a third case of extensive recurrent round-celled sarcoma of the back, of very rapid growth, the disease after disappearance under X-ray treatment of four months' duration, recurred locally, reaching the size of an egg during an interval of eight weeks in which by reason of an attack of scarlet fever the treatment was discontinued. In two other cases there has been no return, but the treatment has been kept up in one case of sarcoma of the femur for eleven months, in the other for seven months. In the last case there have recently developed some suspicious glands in the neck.

[Note.—Since the paper went to press there have developed metastatic tumors in the back and pectoral region in the case of sarcoma of the femure, and the glands in the neck have increased in the other case.]

Nine cases of sarcoma have shown great improvement. In the remaining cases there was either no improvement or the improvement was too slight to be worthy of note.

In four cases of sarcoma originally under my care, I advised the X-ray treatment, but it was carried out by other men. One, an extensive sarcoma of the superior maxilla and orbit, was greatly improved, but died at the end of nine months. In the second case, a sarcoma of the mastoid region, the external part of the tumor nearly disappeared, but the patient developed a septic condition that finally proved fatal. The third case, a very rapidly growing sarcoma of the tonsil and neck, failed to show improvement from either X-ray or toxins. The fourth case, a very large sarcoma, size of eighth-month pregnant uterus. The treatment was begun nearly one year ago, the tumor has decreased in size, and the patient has been able to resume her work.

Of the 21 cases of cancer of the breast, I have seen small recurrent nodules entirely disappear after a few weeks' treatment with the X-ray in three cases, and yet, in every instance, a recurrence followed a short time after the treatment was discontinued. In one case I advised a patient of mine from whom I had removed a cancer of the breast with axillary involvement to have X-ray treatment as soon as she left the hospital. The treatment was given at an "X-ray Institute," and while she was having regular treatments a large mass developed in the periosteum of the ribs below the clavicle and also along the sternal border with extensive edema of the arm. In another case, a double carcinoma of the breast, I began the X-ray treatment immediately after operation at the General Memorial Hospital, and after two months of constant treatment, several small nodules, the size of small peas, have developed in the skin.

* Read before the New York County Medical Society, December 27, 1902.

Of the larger recurrent cancers of the breast, I have seen no case in which the growth has entirely disappeared, although in most instances there has been temporary improvement, as shown by decrease in size, softening of the tumor and diminution in the pain. In some of these cases the treatment has been kept up for more than six months and pushed to the limit of a burn. In one case the pain was so much increased by the X-ray that the treatment could not be given more than four or five minutes at a time.

My experience with deep-seated intra-abdominal cancer is limited to ten cases, two of rectum and sigmoid flexure, four of uterus, one of bladder, three of intra-abdominal sarcoma. In one case of carcinoma of the cervix, the growth apparently disappeared; in one of the sarcoma cases there has been marked improvement, in the other two there was scarcely any. In one case of cancer of the sigmoid there has been considerable improvement as evidenced by decrease in size of growth and increase in weight, yet, there is little hope of entire disappearance.

In the remaining cases of abdominal cancer there has been little or no effect noticeable.

Fifteen Cases of Carcinoma of the Head, Face and Neck.—The superficial epitheliomas showed the best results, one the size of a silver half dollar on the forehead, has almost entirely disappeared, but it should be observed that it required nearly ten months to accomplish this result. Another of the bridge of the nose, extending into the inner canthus of the orbit, has nearly disappeared, yet only after seven months of constant treatment. Neither of these cases can be classed as cures, as only a few weeks have elapsed since the treatment was discontinued. The tongue cases, three in number, showed little or no improvement. One case of advanced Hodgkin's disease has shown very remarkable improvement. The glands in the neck, axilla, and groin have nearly disappeared and the splenic tumor has decreased in size two-thirds, under four months' treatment with the X-ray and toxins.

These results, while they show that the X-ray exerts a powerful inhibitory influence upon some malignant tumors, sufficient in many instances to cause marked decrease in size and in some cases entire disappearance, there is a tendency to speedy recurrence when treatment is stopped. Thus far there has not been recorded a single case of cancer treated that has remained well sufficiently long to be called a cure, in fact there is not a single patient well a year after the disappearance of the tumor.

While admitting that we have in the X-ray a most valuable addition to our means of combating cancer, I believe that the interests of both science and our patients will be best subserved by strictly limiting the method to inoperable cases and to cases after operation, as a prophylactic measure.

The method is still in the experimental stage, and while in this stage it is certainly unwise to advise a patient with an operable tumor to forego

the well-demonstrated chances of a cure by excision and to submit to a new method of treatment that requires many months for even a temporary success and about the permanent value of which we are absolutely in the dark. We are frank to confess that two-thirds of our patients who have had cancerous tumors removed by operation do have a recurrence at some future time. In some of these cases the return does not take place for many years. It would seem that this great class of recurrent cancers would furnish a sufficient field for the trial of the X-ray. In addition to these cases we might add cases after primary operation as a prophylactic measure to lessen the chances of recurrence, though it would take a large series of cases, carefully traced for years, to determine the actual value of the X-ray in this field.

The chief hope of improved results in the treatment of cancer has long rested on earlier diagnosis and earlier excision. To the dread of the knife, which has always been a serious obstacle to the realization of this hope, is now added the idea that in the X-ray the patients have a substitute for operation which promises a sure cure without any of the disadvantages of operation.

The length of time necessary to cause a large carcinoma to disappear, to say nothing of a cure with the X-ray, is hardly appreciated by the physicians, much less by the laity.

While there are on record several cases in which small recurrent nodules have disappeared under a few weeks' treatment (I myself have had three such cases), in most of them there has been a speedy return when the treatment has been discontinued. When we consider the larger recurrent tumors which offer a fair comparison with the primary cancers as they come to the surgeon for operation, how many have we seen disappear under the X-ray? Nearly all show more or less improvement with alleviation of symptoms, enough, to be sure, to warrant our advising the treatment in inoperable cases, but far too little to justify us in offering this method as a substitute for operation. In my own experience I have observed 21 cases of recurrent cancer of the breast treated with the X-ray and yet, in not a single case has a large recurrent tumor disappeared, though in some cases the treatment has been kept up for eight months.

At the Massachusetts General Hospital, where they have as fine an X-ray plant as in any hospital in the country, managed by skilled men, they have had a single case of double recurrent cancer of the breast disappear after a year's treatment. There still remains an enlarged gland in the axilla. [Private communication from Mr. W. I. Dodd of Mass. Gen. Hosp., Dec. 20, 1902.]

It is not any feeling of chagrin at the loss of our occupation as surgeons, that prevents us from subscribing, at least at present, to the opinion expressed at the recent meeting of the American Electro-Therapeutic Association, favoring X-ray treatment for *primary malignant* tumors. Not to dismiss the surgeon too rudely from the field he

has so long considered peculiarly his own, the suggestion was offered that "some of the more limited cases of cancer could be treated by the X-ray until only a small nodule was left, and then, it seemed wise, to do a minor operation to complete the cure."

If further experience proves that the X-ray offers those poor unfortunates afflicted with cancer greater chances of cure than surgery has been able to afford them, I am sure, there will be no one more ready to sheath the knife and retire from the field, than the surgeon who has had the largest experience with malignant disease. Yet, at the present moment, I believe that the interests of these patients are best served neither, on the one hand, by forgetting or underrating the results of operative treatment, nor, on the other hand, by allowing the enthusiasm that naturally is associated with a new method, to lead us to overestimate its value or forget its limitations.

It is unfortunate that at the present moment so little distinction is made, certainly by the laity, and probably by many of the profession, between so-called "clinically cured" cases treated by the X-ray, and the cases regarded as cured by the surgeon. We read of reports giving 50 per cent. of cures by the X-ray, that is, "clinically cured." [The exact meaning of this new term has not yet been defined.] If these results are compared with cases treated by operation, no surgeon would think himself justified in regarding them as cured, until at least three years had elapsed without recurrence.

Furthermore, if these operated cases were judged by the same standard as that used in the X-ray cases, it would be fair to say that 90 per cent. could be counted as cured by operation, inasmuch as this percentage remains free from recurrence fully as long as the cases of X-ray cures that have been reported.

The number of earnest and sincere workers in this new field is already so large as to give promise that we shall be able, in a short time (a few years), to give the X-ray its proper place in the therapy of malignant tumors. In the meantime let us hope that every fact for or against the method may be placed on record and given an impartial hearing.

A PLEA FOR A NEUROLOGICAL HOSPITAL IN NEW YORK.

BY L. PIERCE CLARK, M.D.,
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NEW YORK is in urgent need of more special hospitals. In this respect it could not do better than to follow the example of London with its heart and lung, fever and nervous hospitals. There is no more pressing need in this line here to-day than some sort of ample provision to care for the acute and curable cases of nervous disorders. Neurology indeed is a comparatively new science as one is again impressed by the historical portion of Professor Erb's recent London lec-

ture. Yet the needs of this class of cases has always been with us.

It is a surprising fact that although the three nervous hospitals of London care solely for nerve cases and have a long waiting list, no special hospital, nor even neurological ward, exists in any of our large general hospitals. It is a legitimate inquiry to ask what becomes of these patients. A few chronic cases are in the City Hospital; a still larger number, those either on account of the inherent nature of their disease or neglect in proper care and treatment, are at present in the incurable wards of the almshouse. The greater majority, however, curable and incurable, subsist on private charity and in many cases go to swell the increasing class of public mendicants and beggars. Physicians who treat these patients at the public out-clinics are fully aware of the imperfection of a dispensary diagnosis and of prescribing medicines under home care, where observation, dietetic and hygienic rules cannot be carried out.

There is one central idea steadily gaining ground in the minds of thinking physicians that our knowledge of the nervous system has so far progressed that if therapeutics is to be of value diagnosis must be earlier and the details of treatment must be arranged upon broad lines of general medicine. The nervous system is only to be greatly influenced through agents that modify the general bodily metabolism carried out under fixed conditions. No special legislation would be necessary for establishing a hospital of this character as might be in founding a psychopathic hospital. Then, too, the latter for mental diseases might later form a necessary and correlative adjunct to the former. As to the question of expense: This in a large measure could be met as it is at the Queen's Square Hospital in London, by arranging for contributory wards for the reception of those patients both in and outside the city who are able and willing to pay for expert attention and treatment.

The teaching values of such a hospital would be incalculable for the large medical schools. The cosmopolitanism of New York medicine has not extended as far as it should in post-graduate teaching upon the nervous system. The yearly migration of American physicians to France and Germany for advance work of this kind is still an unrequited appeal for more earnest work here at home.

The manner in which such work may be best inaugurated to meet the practical ends in view is a problem not yet adequately nor satisfactorily settled. If it were a matter of didactic teaching alone it might be simple; but bedside teaching is the essential, either individually or in small sections. A neurological hospital would be the natural center for such bedside teaching; laboratories should also be provided here for research in the nature and treatment of nervous affections which shall embrace chemical, physiological and histopathological equipment. Here too, systematic teaching upon the minute anatomy of the central nervous system could be carried out which as

yet has not been done in a detailed manner in this country. The internes of the hospital should consist of clinical clerkships for senior students in medicine, advanced clerkships for medical graduates who have finished from general hospitals and who wish to specialize. The house staff might be selected from the more able clinical clerks. An out-patient clinic should be incorporated with the hospital for classifying eligible lists of patients.

The erection and proper equipment of such an institution for the poor of all classes in the near future would be a worthy charity for modern philanthropy in a unique and untried field of benevolence. In the meantime it should be the duty of the city to set aside wards in some of the general hospitals in the borough of Manhattan which may for the present at least be organized as a provisional hospital for the immediate care and treatment of acute nervous diseases.

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THE NEGRO AS A CRIMINAL AND HIS INFLUENCE ON THE WHITE RACE.*

BY LOUIS EDELMAN, M.D.,
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EVOLUTION is the great factor in modern history. From the dug out hut to the marble palace, from the ape to the man, from the forlorn worm to the strong animal, there is evolution. Providence has created a wheel of progression and from its motion, sparks of light fly out creating smaller wheels, each going at a higher speed and receiving its motive power from the first atom of creation.

From the nude savage, who roamed the wilderness of Asia, to the great thinker and master-mind of to-day, all this did not come in an hour. It took centuries and ages to develop the mind of man. Education, books, and schools are among the greatest factors that have helped to develop and purify the mind, like the flowing brooks spreading their waters upon the meadows and with their silvery drops making the grass to grow, the flowers to bloom, kissing the sun-scorched vine, impelling it to climb higher and higher. Education not only develops the intellect to higher virtue and morality, but it is also the great cause that develops the resources of a nation. For every dollar the State spends on the education of its children, black or white, she saves two which she would otherwise spend upon jails and almshouses.

It is not the wise alone that leave their imprint upon the sands for posterity, but the criminal leaves a bad impression upon the future generation, especially if the publishers exploit the heroism of a criminal.

Important Question.—Your secretary emphasized in his circular that he would like a paper upon the sociological question of to-day. There is not a more important question that

involves the welfare of the South than the negro problem and its solution.

The white man's burden is here to stay and he must seek a remedy to lighten it. Severe punishment, lynching, burning at the stake, are not the best means of solving the problem. The bad influence on the white race of lynching negroes is almost eternal.

In the present modern civilization there are many things which influence and mold manhood and womanhood. Heredity is a powerful factor in life. The society in which we live, the books we read, the zone in which our home is located, the poverty we suffer, the wealth we enjoy, the kindness shown us or the cruelty inflicted upon us, tend to mold our lives. The child is subjected to many visible and invisible forces. The forces of nature that govern the white man also govern the black man. Crime need not necessarily be charged to the black man. Crime is natural. It belongs to animals as well as to men. Larceny began with the creation of the first human being. It was Adam and Eve who first stole the forbidden fruit. Self-preservation is the first law of nature. Animals as well as men have risked their lives to obtain food which did not belong to them. In the early ages of civilization, humanity did not recognize larceny as a crime. The Spartan's crime was not in stealing, but in its detection. The Gauls, Athenians and Teutons believed possession to be nine points of the law. Education alone has brought about the condition of recognizing personal property and personal rights.

Percentage of Criminals.—There are in this country 866 criminals to every million of white inhabitants, and 2,974 criminals to every million of negro inhabitants. The percentage of negro arrests in the Southern cities is about 60 per cent. In Washington, D. C., with a population of 277,782 in 1901, 26,062 arrests were made; of these 12,582 were from the white population of 189,457, and 13,780 from the colored population of 88,325. Montgomery, Ala., with a population of 30,346, made 2,687 arrests in 1901, of which 1,793 were from a colored population of 12,000, and 894 from a white population of 18,000. Birmingham, Ala., with a population of 38,415, made, in 1901, 10,479 arrests, of which 4,030 were white and 6,600 colored. The city of Louisville has a population of 205,000 of whom 57,000 are negroes. In 1901 there were 7,958 arrests and of this number 4,313 were negroes. In Nashville with a population of about 63,000 whites and 37,000 negroes, there were in 1901, 9,837 arrests of which 6,081 were negroes. In Atlanta, with a population of 65,000 whites and 38,000 negroes there were 17,286 arrests, 5,784 whites and 11,502 negroes. In Jacksonville, Fla., with a population of 28,429, there were in 1899, 3,683 arrests of which 976 were whites and 1,919 negroes.

Professor Starr, of Chicago University,

* Read before the Tri-State Medical Association, Birmingham, Ala., October 7, 1902.

claims that in the State of Pennsylvania, where there is little opportunity to assert that the courts are prejudiced against the colored criminal, the negro furnishes 16 per cent. of the male and 34 per cent. of the female prisoners, though he forms only two per cent. of the population. In Chicago, which is said to be the "negro heaven" he furnishes 10 per cent. of the arrests, though he forms only $1\frac{1}{3}$ per cent. of the population.

I have taken these statistics at random and you will perceive the alarming conditions of negro criminality.

Reason for it.—The reasons that the percentage of criminals in the black is larger than in the white race are, first, slavery; second, ignorance; third, environment.

The effects of slavery have been to a large extent the cause and origin of petty larceny among the negroes. Being deprived of their liberty, watched closely by their masters, the fear of punishment made cowards and petty thieves of them. The same conditions exist today in Russia and Turkey among the peasantry. Up to forty years ago the negro was absolutely ignorant, not knowing the first principle of life. Crime was natural with him and his only guide was his debased instincts. The negro is the natural product of his environment. Bad association and living in filth and dirt have made him a criminal.

I have heard it so often said: "Educate a negro and you make a criminal out of him." Statistics do not prove it. Of the 24,272 negro criminals in 1890, 13,138 could neither read nor write, or 57.13 per cent. were absolutely illiterate. After forty years of freedom, Booker T. Washington and W. H. Council have struck the keynote of the negro problem: that in labor lies the redemption of the negro. There are too many negro idlers, who are living from the white man's kitchen.

What are the means to diminish the crime among the negroes? First, encourage the work of Booker T. Washington and W. H. Council. Second, look upon the negro as a human being, as a man who needs your help. But the best means to diminish crime among the negroes is a strong vagrancy law and a reformatory school for the children. A gentleman of high standing in the South told me that he knew of cases where negroes committed petty crimes in order to be sent to jail and be fed. The State is under obligation to its tax payers and to posterity to care for the degenerates and idlers.

An investment of a few thousand dollars in land and agricultural implements would not only save the tax payers large sums of money, but it would give the negro a chance in life to become industrious and make a good citizen. My plan is for the State to own a large tract of land, so that whenever a man becomes idle or becomes a prominent figure in police circles, he could be given an opportunity to go to work

on the State farm or leave the State. Treat him kindly and pay him whatever he is worth above the cost and expense of maintaining him. The convict farm of Mississippi pays to the State \$200,000, or more, per year, so does the convict farm of Arkansas. I have recently written to many chiefs of police in the larger cities of the South asking their opinion about a vagrant law and they all forcibly approve of it.

The sending of young boys and girls to the penitentiary for petty crimes is an outrage upon humanity. Coming in contact, as they do, with hardened criminals, who are beyond redemption, naturally breeds the infectious poison, and after being released they remain criminals and a menace to society. For your own selfish purpose, agitate this question when you go to your homes. The cry in every community should be for a vagrancy law, the State ownership of a large farm and a reformatory school for young criminals.

In Philadelphia, Louisville, New York, Chicago, and a great many other cities, they have houses of correction where they teach young criminals a trade. They have to remain there for five years and after that time they leave with a good trade, fully able to take care of themselves. The incapacity of making a living breeds crime, but when a man has a trade he is fully able to cope with the world. The physician who devotes his life to preventing disease, should give a portion of his time to preventing crime. There is not another profession that gives more of its time to elevate humanity than the family doctor. The negro is with us to stay. There is no visible means, at present, of eliminating him, either by extermination, or by emigration. He is part of our body politic, and it is our duty to make a good citizen out of him. Persecution, hatred and depriving him of the right to vote is a bad plan. Give the negro who has shown himself worthy by industry and good behavior the right of suffrage, and thus encourage others to follow in his steps. Treat him kindly, and you will make him your friend. Persecute him and you will make a criminal out of him. The negro's future either for good or bad is in the white man's hand.

AFFECTIONS OF THE LABYRINTH RESULTING FROM GENERAL AND ORGANIC DISEASE.*

BY THOMAS R. POOLEY, M.D.,
OF NEW YORK.

THE great advance in our knowledge of diseases of the external and middle ear within the past 25 years has not been equaled by that made in the pathology of the inner ear. On the contrary, we are as yet in the beginning of our knowledge, notwithstanding the results of the recent important and interesting investigations made by

* Read before the Section of Otology, New York Academy of Medicine, Nov. 13, 1902.

clinical observations and post-mortem examinations. The principal reason for this lies in the fact that we so rarely have the opportunity for anatomical examination of the ears of patients who have been clinically examined during life, suffering from diseases of the hearing apparatus. Thus it is that, on the one hand, we have a series of interesting clinical observations on the diseases of the internal ear without being able to refer them with certainty to their pathological changes, and on the other hand, a series of post-mortem appearances of the internal ear, few of which can be referred to cases which have been carefully examined during life.

The purpose of this paper is to consider, principally from a clinical standpoint, but also with some reference to pathology, a brief outline of those diseases of the inner ear which are associated with general or organic conditions of the system. This arrangement will be carefully adhered to by excluding, as far as possible, all diseases of the acoustic apparatus caused by trauma, affections of the middle ear extending to the inner ear, and those from toxic causes, also congenital deaf-mutism. I shall also exclude the so-called Ménière's disease, which in my opinion is only a complex of symptoms indicating affection of the labyrinth, which may be due to a variety of pathological conditions.

In a paper limited by the short time at my disposal it will not be possible to enter minutely into the details of diagnosis, methods of examination, etc. I must take it for granted that this is familiar ground to you all. For instance, it would be an easy matter to fill up all of my time with a description of the differential diagnosis of diseases of the middle ear from those of the inner ear. Such, however, is not my intention.

In judging of so many disturbances of the ear it is important to bear in mind that the auditory nerve is the most "impressionable" of the nerves of sense, and that its function is more often interfered with by general disease and by chemical changes in the blood, infections of specific microbes and purulent infiltration than either the optic, gustatory, olfactory or other sensory nerves. The anatomical changes in the inner structures are, however, but little known. The connection between certain organic diseases and ear affections has been alluded to by some of the earliest writers as occurring in the course of affections of the stomach, liver, kidneys, uterus, etc. Politzer (*Diseases of the Ear*, p. 687) very properly remarks that this is, however, a much less frequent cause than is usually supposed, for changes in the middle ear are generally found to exist. But even in cases of admitted disease of the auditory nerve it must not on that account be connected with the organic disease, for aural and organic disease may develop quite independently of each other; however interchanges between these organic diseases and the organs of hearing cannot be denied. With these general considerations I shall now proceed to the enumeration of those diseases which are

the most frequent in occurrence and in which are found complications of the inner ear:

Cerebral Anemia and Hyperemia, unless associated with organic lesions, seldom effect any serious change in the ear, they may, however, cause subjective symptoms, such as tinnitus and giddiness, and anemia in patients convalescing from a serious disease is an occasional cause of deafness which, however, subsides as the general condition improves.*

In ordinary meningitis the auditory nerve and structures in the labyrinth are seldom affected, but in a few recorded cases purulent inflammation of the ependyma, softening of the floor of the fourth ventricle, purulent infiltration and atrophy of the auditory nerve were found after death. In children who recover, deafness is usually complete symptoms of loss of coordination are present for some time. In adults the deafness is less marked and tinnitus continues for an indefinite period.

Hemorrhagic Pachymeningitis has been found to cause deafness by blood extravasations between the fibers of the auditory nerve.

Cerebrospinal Meningitis.—I have classed this affection under the head of cerebral diseases although, as is well known, it usually occurs in an epidemic form, and during the prevalence of such epidemics here, in Germany and elsewhere, numerous cases of both blindness and deafness occurring in its course have been observed.†

At an early stage of the disease pain, tinnitus and more or less deafness occur, and may continue until the patient becomes insensible. There is also opisthotonos, general convulsions and high fever. Ear affections are more liable to appear in children than in adults and the loss of function generally involves both ears. Knapp (*Archives of Otolaryngology*, Vol. XIII, p. 214) reports a case in which only one side was affected. If the meningitis does not prove fatal marked unsteadiness of gait shows itself and the deafness continues during convalescence. The unsteadiness passes off after a time but the deafness remains.

In some cases the deafness is accompanied by loss or impairment of function of one or both eyes from purulent irido-choroiditis, by paralysis of the extrinsic eye muscles, by disorders of speech and symptoms indicating involvement of other nerves. Facial paralysis is absent in the majority of cases.

The late Dr. Moos in his valuable monograph on Epidemic Cerebrospinal Meningitis and the Subsequent Accompanying Disturbances of Equilibrium (1881), says that authors differ a great deal in their percentages of permanent disturbances in comparison with the total number of

* Wilde (p. 373) says: "Of cerebral deafness or that arising from disease of the brain or its coverings, it is usually accompanied with giddiness, derangement of the stomach, and manifest impression upon the general health; a good example is observed in the case of the celebrated Dean Swift, on which I have already remarked. See Closing Years of Dean Swift's Life."

† Wilde (1853, p. 362) however, was the first to call attention to the relation between deafness and cerebrospinal meningitis. "In regard to chronic deafness not characterized or accompanied by any trace of marked lesion in the ear, I have seen a person so affected in process of time, longer or shorter as the case might be, show symptoms of cerebrospinal disease."

cases observed. This is no doubt explained, as pointed out by Hovell in his book (*Diseases of the Ear and Nasopharynx*) that the liability to aural disease is not in proportion to the meningeal affection, and different epidemics vary as to the frequency of the complications referred to. It has been pointed out, too, that symptoms of deafness and loss of equilibrium may be due to changes in the brain or its membranes without any lesion in the organ of hearing itself.

Cerebrospinal meningitis is the most common cause of acquired deaf-mutism. Moos in his cases found 59.3 per cent. This is not to be wondered at since the disease generally affects children.

A contention has arisen between several observers in regard to the etiology of cerebrospinal meningitis as a factor in causing disease of the inner ear. In 1882 Voltolini (*Die acute Entzündung des hautigen Labyrinthes der Ohren irrtümlich für Meningitis Cerebrospinalis gehalten*) published an account of 187 deaf-mutes whose malady in his opinion, was due to *otitis labyrinthica*, but in whose histories he failed to recognize any indication of cerebrospinal meningitis.

Hartmann (*Archives of Otolaryngology*, Vol. XIII, p. 297) and Gottstein (*Weitere Beiträge zur Neuropathischen Form des Ménièreschen Symptomen Complex*, *Arch. f. Ohrenheilk.*, XVII) have shown Voltolini's views to be erroneous and that in most of his cases the aural disease was due to cerebrospinal meningitis. The same conclusion was also reached by Moos (*loc. cit.*). According to the latter authority also, when the deafness comes on between the third and tenth days of the disease the labyrinth is involved by becoming itself the seat of inflammatory changes, but when deafness begins on or after the fourteenth day the internal ear has become infected by extension of infection along the auditory nerve. Knapp (*loc. cit.*) concludes that in cerebrospinal meningitis both the eye and ear may be affected in two ways; i.e., by propagation of the infection along the optic and auditory nerves, which for the eye at least is the rarer of the two, or secondarily by metastatic inflammation of the interior of the eye or ear. In cases of the second category the functions of the auditory and visual nerves are not always destroyed. Voltolini's theory of an independent otitis interna fails to explain the simultaneous occurrence in the two organs.

The prognosis is embraced in what has already been said, but those who hear high notes have a better chance of recovery than those who cannot hear them, and in cases of absolute deafness without tinnitus the supervision of the latter symptom is a favorable omen.

The following conditions have been found post-mortem: Swelling and hyperemia of the trunk of the auditory nerve, with deposition of purulent matter around it, and the same condition of the membranous labyrinth with extravasations of blood. The changes in the latter structure may be developed independently of the other aural

lesions and either as a result of the neuritis or by propagation of the mischief along the *aqueductus vestibuli* and cochleæ.

When we take into consideration the importance of this subject and the fact that Moos wrote a monograph of 68 pages on it, the material for which he had been collecting with his well-known conscientiousness for more than eighteen years, this may well seem an altogether superficial abstract of this important subject; but time will not allow a more thorough consideration and we must pass on to other affections.

Lesions of the Cerebral Blood Vessels, including embolism, aneurism, rupture and thrombosis of the veins and sinuses, may involve the inner ear in various ways. Rupture, even though small in extent, may involve the auditory centers, when the effect on hearing is likely to be very bad.

Degenerative changes in the labyrinth with loss of hearing may be due to embolism. Thus, in a case of endocarditis reported by Harbermann (*Arch. f. Ohrenheilk.*, 1898, p. 119) the sudden, complete deafness of the right side was undoubtedly due to an embolism of the internal auditory artery. This condition has also been observed by Friedreichs, cited by Alderton (*American Text-Book of Diseases of the Ear, Nose and Throat*) as well as by others.

In *Cases of Tumor of the Brain* sight is much oftener affected than hearing and complete deafness is rare. Such growths sometimes produce deafness when they occupy or extend into the space between the internal auditory meatus and the side of the pons. More or less impairment of function is noticed in about one-thirteenth of all the cases.

La Dame's statistics, quoted by Hovell (*loc. cit.*) show that the hearing was affected in seven out of 77 cases of tumor of the cerebellum; in three out of 14 in the middle lobe; while in 45 other instances the parts involved being the anterior lobe 27; the posterior lobe 14; the floor of the fourth ventricle four, the hearing was unaffected. But affection of the auditory nerve was caused in various ways, the principal being atrophy of the trunk or nuclei from pressure, embolism of the internal auditory or basilar artery, and extravasation of blood at the base of the brain and into the labyrinth.

The evidences of infection of the ear are deafness, tinnitus and giddiness; deafness is generally one-sided but sometimes both ears are involved. Amblyopia is very commonly superadded and in some cases precedes the deafness.

Syphilitic Growths in the brain may involve the auditory nerve with disorders of its function as a result.

Diseases of the Spinal Cord sometimes give rise to disorders of hearing. Althaus (*American Journal of Medical Sciences*, April, 1879) describes a case of labyrinthine neuritis in a patient with locomotor ataxia who was under his care. Besides the usual symptoms there were vertigo, tinnitus and nausea but no loss of consciousness.

The external and middle ears were normal. There was a second attack of sudden vertigo followed by coma and for two days an elevation of temperature. This passed off in a few days and from that time on the patient improved and was able to walk three or four miles and attend to his business. Althaus looked upon this case as one of acute inflammation of the labyrinth. The second attack of nausea and vertigo he considered due to hemorrhage into the labyrinth. Atrophy of the auditory nerve has been discovered in several cases of ataxia. This is not so very remarkable, reasoning from analogy, as atrophy of the optic nerve is well known to be a frequent cause of blindness in locomotor ataxia.

I now pass on to consider the affections of the inner ear which more or less frequently attend general diseases, for the most part febrile and infectious in character. For the sake of brevity I shall consider diphtheria, scarlatina and measles under one head. As is well known, all of these diseases frequently affect the middle ear and probably extend from there to the labyrinth, so that I need only say here that Moos has found the streptococcus in the labyrinths of patients who had died from both diphtheria and measles (*Zeitsch. f. Hygiene*, 1888). Rohrer, of Zurich (*Correspondenzblatt f. Schweizer-Ärzte*, 1884) reports a case of complete bilateral deafness following measles, in which there was a normal state of the middle ear and only intumescence of the nasopharynx. Complete deafness resulted and nervous symptoms—epileptoid spasm, headache, disorders of speech, all of which would indicate cerebral changes.

Moos (*Arch. of Otolaryngology*, Vol. XIII, p. 232) reports a case of double labyrinthine disease after scarlatina. There was purulent otitis media in both ears, and Wolff (*Arch. of Otolaryngology*, Vol. XIV) reports two cases of severe labyrinthine disease complicating scarlatinal diphtheritis with extensive destruction of the membrana tympani and otorrhea. The latter quotes Gottstein's essay (*Arch. f. Ohrenheilk.*, Bd. XVII, p. 16) as saying "whether we have to do with an extending inflammatory process or whether the ear affection is due directly to a specific poison can only be determined by carefully observing cases from the beginning, and this we seldom have the opportunity to do." For my part, it seems to me more probable that in nearly all of these cases the extension is from infection through the middle ear, and hence following my purpose to consider at length only cases in which this can be excluded, I dismiss further consideration of these cases.

Influenza or Grip.—While in all recent epidemics of influenza or grip in this country and abroad the various forms of aural complications observed in a small percentage of cases have been those affecting the middle ear, there is, however, abundant evidence in literature that in some cases the symptoms point to involvement of the inner ear. Moos (*Arch. of Otolaryngology*, 1895) has reported two cases. In one of these the symptoms were those of Ménière's disease; in the other, that

of a man aged twenty-five years, sudden rupture of the membrana tympani took place with the escape of blood, but without giddiness. The hearing was totally lost and Moos inferred that a hemorrhage into the cochlea had occurred. In a very small percentage of cases the symptoms are referable entirely to the inner ear. The patient is found free from catarrhal symptoms and the whole trouble in the ear is referable to the sound-perceiving apparatus.

In the milder cases, and these in my opinion are of the most frequent occurrence, there is some hyperesthesia for all notes and sounds in general. Vertigo and other subjective symptoms are present but the acuteness of hearing is unimpaired. These symptoms almost invariably disappear. But disturbances of equilibrium rarely occur, although cases have happened in which not only this symptom was present but also nausea and vomiting, decided impairment of hearing, and even total deafness without any changes in the middle ear. Two views have been put forth as to the cause. One is that it is presumably due to the action of a specific micro-organism circulating in the blood conveyed to the labyrinth by the blood current and the lymphatics; the other is that the perceptive apparatus suffers from inflammation of the nerve trunk, as has been observed in the optic nerve, and results in sclerosis of the nerve fibers. Admitting the possibility of both these conditions, I should say that the latter is more often the case, especially in those instances which result in total deafness. This conclusion is based on a number of instances in which optic neuritis has been observed by myself and others after the grip.

Mumps.—The occurrence of ear complications in parotitis although it had been noticed by many different observers, did not until rather recently attract particular attention and the literature up to this time had been rather scant. Within the last ten years, however, numerous publications have made their appearance. The manner in which the ear is attacked still remains doubtful. Toynbee (*Diseases of the Ear*, 1867, p. 361) points out the connection between mumps and deafness, and states that the latter condition was due to some affection of the auditory nerve. He says, "as a general rule no disease of the meatus, membrana tympani or tympanic cavity is present." Hinton (*Questions of Aural Surgery*, p. 220) believes the occurrence of deafness from mumps next in frequency to that from scarlatina. This statement, however, is not borne out by other observers. Sir Wm. Dalby (*Diseases of the Ear*) says that mumps must be included in the causes which induce deaf-mutism. He has on many occasions known partial or complete deafness to occur from this cause. Politzer (in his last edition of *Diseases of the Ear*) only makes slight mention of this disease as a cause of deafness.

Symptoms.—When the labyrinth only is affected the disease may be on one or both sides,

and is generally complete and incurable. Gruber reports a case in which swelling of the gland was comparatively slight, and yet on the third day the patient became totally deaf on both sides. The case was a sporadic one and the symptoms of the mildest type. Following these earlier views all of the more modern text-books point out diseases of the inner ear as sequelæ of mumps. The cases in journal literature on this subject of late have become too numerous for me to mention them all.

Five cases are recorded by G. Brunner, of Zürich (*Arch. Otol.*, Vol. IX, p. 102); one of his own, the others respectively by Buck (*American Journal of Otology*, Vol. III, p. 209), Roosa (Transactions of the American Otological Society, 1881) and Moos (*Arch. Otology*, Vol. XI, p. 13). Brunner's case was a woman, thirty years old, with double mumps. Soon after vertigo and tinnitus developed. The vertigo increased and at evening she said she could not hear with her right ear. She remained in bed eight days, during which time the swellings decreased but the tinnitus and vertigo remained. When she got up she reeled like a drunken person. The vertigo gradually disappeared, but the noises and the deafness in the right ear increased. Examination showed the left ear normal and on the right side normal membrana tympani and middle ear, but total deafness and absence of bone conduction. Buck's two cases are briefly as follows: The first was a girl who on the third day of an attack of mumps had sharp pain in the ears, and on the following day she discovered that she had lost her hearing. The second case was that of a man in whom deafness developed without pain during an attack of mumps. In both cases the parotid glands were equally involved but only one ear was affected. Buck thought in both cases the deafness was due to some disease of the labyrinth.

Roosa, in the last edition of his book reports a similar case. Moos' case was a boy of thirteen years, seen by him ten months after the occurrence of deafness. He had had double parotitis for ten days, epidemic at that time. The hearing was totally abolished on the fifth day, vomiting occurred on the sixth, on the eighth he left his bed and staggered as he walked. The latter symptom gradually disappeared. There was no striking departure from the normal in the appearance of either membrana tympani. The boy had become mute. He seemed to have perception by bone conduction in the right ear but none whatever in the left.

Brunner refers to the fact that even in the large German text-books no mention is made of such conditions, with the exception of a notice by Moos and Urbantschitsch where in speaking of labyrinth hemorrhage, reference is made to a post-mortem specimen by Toynbee, after mumps.

I have dwelt thus at length on Brunner's cases, and others to which he refers, because of the most excellent summary which he gives of the symptoms and course of the disease, and to

which I shall return hereafter when I allude to a few more of the published cases.

To the five cases of Brunner, Knapp adds two others of his own (*Arch. of Otology*, Vol. XI, 232, 385), one in which the deafness without any evidence of middle-ear affection was on the right side only; in the other it was bilateral, absolute and also without implication of the middle ears.

Kipp (*Arch. of Otol.*, Vol. XIII, p. 116) reports two cases of total loss of hearing in one ear from mumps. In the first there was total loss of hearing in the right ear when first noticed fifteen days after an attack of mumps, while the patient was suffering from metastatic inflammation of the left testicle. This case differs from all others on record in that the deafness was developed while the patient was suffering from metastatic orchitis. Kipp refers to a very similar one reported by the late Dr. Noyes (Trans. American Otol. Soc., 1879, p. 342). In this case the ear symptoms appeared before the orchitis.

In Kipp's second case, a boy of 14 years, seen two years after an attack of bilateral mumps, the history was that while suffering from this disease he suddenly became deaf in the left ear and remained so. Kipp found total deafness in the left ear, the one in which hearing was lost from the mumps. The middle ear, as far as was possible to ascertain, was healthy, except that the membrana tympani was slightly more transparent than usual. The right ear showed all the usual symptoms of an acute catarrhal inflammation of the middle ear. He was treated for this in the usual way and a month later his hearing was nearly normal. Kipp thinks that this case was interesting because of the fact that two years after an attack of a kind which led to loss of hearing in one ear, he was attacked in the other by probably an entirely different disease. In these cases nasopharyngeal catarrh may have existed before the parotitis developed and the ear disease which occurred during the mumps may have been a middle-ear affection. The slightly atrophic membrana tympani would support such an assumption but if the primary disease was situated in the tympanum it must have caused secondary labyrinthine disease for the deafness in this ear was complete, as shown by tests with tuning forks.

Swan M. Burnett (*Arch. of Otol.*, Vol. XIV, p. 19) reports a case of absolute loss of hearing in both ears accompanying an attack of mumps. There is nothing very unusual in his case except that both ears were affected. The parotitis was epidemic and three of four other children in the family had been attacked, some very severely, but the patient's attack was light. About a week after the attack began it was discovered that he was totally deaf. He staggered and heard loud musical tones, and laughingly informed his mother that he was drunk. Aside from these nothing unusual was noticed or complained of. Burnett examined him 16 days after the loss of hearing and found no abnormality of the membrana tym-

pani and there was no unsteadiness of gait but the hearing power was nil. Burnett gives as the practical points in his case the mildness of the attack of the mumps and the certainty of the deafness being due to labyrinthine disease.

I have had no trouble in finding more similar cases than I have time to enumerate, and shall now give in brief the symptoms observed in all of them.

Brunner (loc. cit.) arrives at the following conclusions with regard to deafness after mumps:

1. The nervous deafness after mumps may be unilateral or bilateral;
2. It is complete and according to past experiences, incurable. (Here I will call attention to exceptions to be mentioned later.)
3. It develops rapidly (in a few days) with vertigo and subjective noises, the latter symptom lasting a long time.
4. There is little or no fever, pain is very seldom complained of and consciousness is not lost.
5. The complication is noticed in both children and adults, but would seem to be more frequent in children.

The deafness and other aural symptoms occasionally precede the local pain and swelling and must often be considered as an evidence of general infection. In most cases, however, the aural symptoms are developed either between the third and eighth days or as the disease subsides. Deafness appears suddenly and rapidly increases. It is usually accompanied or closely followed by tinnitus, giddiness, pain in the forehead or occiput and nausea. The patient staggers but there is no loss of consciousness. Pain may be altogether absent or when present, only of short duration. In some cases mumps is followed by distinct evidences of meningitis with subsequent marked unilateral deafness. Occasionally the deafness develops while the patient is suffering from metastatic orchitis, or the ear symptoms appear before the orchitis (Kipp and Noyes). Temperature varies; it is likely to be high, if the otitis appears at an early period. Both ears may be simultaneously or successively affected and the symptoms are not infrequently confined to one ear, the right side being said to be more prone to suffer than the left. The same difference is observed in the testicles. Examination of the membrana tympani and middle ear reveals no abnormalities.

The deafness is absolute for sounds and notes of all kinds, bone conduction being totally lost. The deafness is permanent but the other symptoms gradually disappear.

Deaf-mutism is sometimes attributed to mumps; Roosa reports two in 147 cases.

With regard to the nature of the disease, it is pretty generally considered that it is located in the labyrinth, as first pointed out by Toynbee. He speaks of a complete disorganization of the nervous apparatus in the labyrinth and of a dark-colored fluid in the vestibule and cochlea, which, by the way, is the only record of postmortem examination I have been able to find. The case is reported in his descriptive catalogue of prepara-

tions illustrative of diseases of the ear, in the museum of the author. How the disease invades the labyrinth we do not know, but in the absence of post-mortem examinations this point remains undetermined and becomes a matter of conjecture. Roosa's opinion that it comes through the canal into the tympanic cavity and from there into the labyrinth, is combated by the fact that neither the canal nor the membrana tympani are affected.

At least two different views are held as to the origin of purely labyrinthine disease associated with mumps. One regards the inflammation of the parotid as a local disease and the development of the process in other organs as the result of extension or metastasis. Combeau (Vogel-Ziemssen's Handbuch, Vol. VII, 1, 103) considers mumps as a general disorder with many local manifestations, which may localize itself in various parts of the body. The affection in the internal ear, possibly amounting in its final stage to atrophy of the auditory nerve, may be regarded as a direct local effect of the general infection, just as occurs in the testicles, ovaries, breasts, kidneys and prostate gland. These parts, however differ from the inner ear in that they are glandular organs.

It is altogether likely that the blood contains a specific poison, the nature of which is unknown, and that this passes into the inner ear and sets up a plastic or exudative inflammation, the products of which do not become absorbed but are converted into connective tissue that extends between the end organs of the nerve and the parts around, inducing atrophy of the sentient structures.

Another explanation is suggested by Urbantschitsch (Lehrbuch der Ohrenheilkunde, 3. Aufl., S. 436) namely, that the changes in the labyrinth are the result of reflex action. The irritation of the fibrillæ of the fifth nerve contained in the gland, is conveyed to the labyrinth. This is, no doubt, suggested to this author by the reflex theory of sympathetic ophthalmia, which I believe, is now pretty generally abandoned. Schwartz (Handbuch der Ohrenheilk., 1. Bd., S. 585) gives as his view that all local disorders, including those of the labyrinth which occur in mumps, are due to the migration of a specific micro-organism.

In concluding this already too lengthy résumé, I bring to notice several cases, one by F. W. Jollye (*Arch. Otol.*, Vol. XXVII, p. 20) the others reported at a recent meeting of this Section (*Arch. Otol.*, Vol. XXXI) by Dench, in which the administration of pilocarpine, at first subcutaneously and afterwards by the mouth, was followed by restoration of hearing. The latter observer, I may add, thought the prognosis good except where the lesion had existed too long.

Typhus, Typhoid Fever and Variola.—Murchison (Treatise on Continued Fevers of Great Britain, 3rd Ed., p. 177) observes that disorders of hearing and especially deafness occur in 50 per cent. of all cases of typhus, and that both the

internal and middle ears are prone to be affected. To my mind it is highly probable that the effect produced upon sound perception is due rather to the effect of the specific poison on the cerebrum than on the terminal fibers of the auditory nerve, as shown by improvement of hearing during convalescence. In three cases of affection of the labyrinth in 42 cases, occurring amongst 130 typhus patients, prompt and complete recovery took place.

Hartmann (Affections of the Auditory Organs Occurring in Typhus, *Arch. Otol.*, Vol. IX, p. 53) says that the deafness occurred about the fourth or fifth day, the patient complained of noises in the ear and a few days thereafter the attendant noticed more or less deafness, and in some cases complete loss of hearing. Nothing abnormal could be detected in the membrana tympani or middle ear. Both sides are usually affected, the symptoms pass off during convalescence and function is fully restored.

Murchison (loc. cit.) looks upon paresthesia—or, as he says, intolerance of sound, as a bad omen.

Typhoid Fever.—Aural complications connected with typhoid fever were noticed in the early part of this century. The additional fact that meningitis may be thus induced was observed and recorded by Louis (*Recherches sur la Fièvre Typhoïde*, Vol. II, p. 92) in 1841, and by Peacock, some years later (*Med. Times and Gaz.*, 1816, No. 13). All parts of the ear become affected but we are only concerned with the affections of the inner ear.

Eulenstein, Erlangen (Affections of the Ear During the Course of Ilio-typhoid Fever, Inaug. Diss., 1882, which is founded on cases collected by Bezold in Ziemssen's clinic at the Munich Hospital) says, the central or nervous form of the aural affection with negative diagnostic points is independent of the catarrhal process, and may be a sequence of the blood crisis or paresis of the nerve. Mention is made of the inflammatory changes in the nerve found by Moos.

Bezold (On the Affections of the Ear in Typhoid Fever, *Arch. f. Ohrenheilk.*, Vol. XXI, p. 1) recognizes, as does Schwartze, a deafness without noticeable evidence of inflammation, which appears to be due to central disturbances. In some cases the affection of the acoustic nerve comes on in the first few days. The causes of affections of the nervous apparatus are obscure, but it has been assumed that they are due to changes in the blood current, or specific virus may enter the labyrinth and affect the organ of hearing or cause degenerative changes in the nerve elements.

In fatal cases deposits of lymphoid cells, infiltration of small cells and new-formed connective tissue have been occasionally found. Again, however, would I emphasize the view stated at the beginning, that these disturbances are more often of a central origin.

In concluding the cases under this category, I only make the briefest allusion to the fact that

in some of the severest forms of hemorrhagic smallpox the labyrinth is sometimes affected.

On autopsy the labyrinth has been found hyperemic or presenting circumscribed or diffused patches of infiltration. Hemorrhage into the sheath of the nerve is another appearance which is probably due to embolism and rupture of the vessel.

Diseases of the Inner Ear in Malaria.—In considering the affections of the ear occurring in malaria, it is first of all necessary and important to discriminate them from disturbances of the auditory nerve which may be caused by quinine, so often given in large doses in this complaint, for, as is well known, this drug causes toxic effects on both eye and ear.

Hotz (*Arch. Otol.*, Vol. IX, p. 241, Aural Complaints in Consequence of Malaria) speaks of Voltolini (*Monatssch. f. Ohrenheilk.*, Nov., 1871) and Weber-Lille's (*Monatssch. f. Ohrenheilk.*, May to July, 1878) description of an *otitis intermittens* and an *otalgia intermittens*, and reports several such himself; but as the essential features in all of these were the subjective symptoms of acute catarrhal otitis, the peculiarity of the disease being its intermittent character, we may omit any further mention of them here.

Knapp (*Arch. Otol.*, Vol. IX, p. 232, Report on 806 Cases of Ear Disease Treated in Private Practice) gives a very remarkable case of deafness from malaria or cerebrospinal meningitis. A young man of seventeen years, had always been in good health until the evening of March 20, 1881, when he had chills lasting a few hours. He vomited during the night and the next morning was dizzy, drowsy and delirious; grew maniacal at noon and became totally unconscious in the evening. His temperature was high and he vomited all he took. This condition lasted three days. He was attended by the best physicians of New York. On the third day his consciousness returned. All the physicians but one, who diagnosed cerebrospinal meningitis, thought it a violent attack of malaria. When he awakened from his stupor a dose of 2.5 grams, equal to 40 grains, of quinine was given, which he retained. Then he was given 0.30 grams, equal to five grains, every two hours for one day, and 0.30 grams, equal to five grains, three times daily for several days. After the first dose he had the most intense buzzing in both ears which disappeared from the right ear several days later, but not from the left, which remained deaf. For six weeks he felt sick, and staggered when he walked.

Knapp says: "I declared the left ear completely and incurably deaf," but whether the primary disease was malaria or cerebrospinal meningitis he did not know. One-sided deafness from the latter cause does occur, but is very rare. I remember only one case from my own experience. It seems to me not at all unlikely that the large doses of quinine might be responsible for the deafness in this case.

Besides the forms of the disease already men-

tioned, Hovell (Diseases of the Ear, and Nasopharynx) says, "In another and more distinct class of cases the nervous structure of the ear is particularly implicated. Unless as a result of previous disease, there is no appearance of exudation or inflammation but the tympanic membrane and the middle ear are quite normal. The symptoms take the form of neuralgia of an intermittent type or of a sensory irritation with or without deafness. This seems to be the intermittent otalgia of Voltolini, already spoken of as an *otalgia intermittens*, which he thinks due to a general inflammatory condition of the middle ear.

Deafness may occur at regular intervals and unaccompanied by any visible changes. Intermittent attacks of tinnitus also belong to this class and may either occur alone or with the deafness. Symptoms like those of Ménière's sometimes assume an intermittent type. My own conviction from my brief study of the literature, however, leads me to the conclusions that any lesions of the labyrinth or other structures of the inner ear are exceedingly rare, and most of the symptoms referable thereto in which disease of the middle ear can be excluded, are due to irritation of the brain or to toxic doses of quinine. This statement is made with the full knowledge that such symptoms are said to disappear when the drug is given a few hours before the expected attack.

Syphilis.—Syphilitic affections of the labyrinth may be due to either acquired or inherited syphilis, but far more frequently to the latter. In both cases the symptoms are probably due to similar changes in either the nervous structures or other parts of the internal ear. In cases of the acquired disease the period at which the ear symptoms occur vary considerably. They may appear at the same time with the eruption on the skin or in the throat; in other cases many years after the primary infection, after the disappearance of all other symptoms. Sometimes they may coexist with other changes in the ear due to middle ear disease of catarrhal origin. This is especially so in the hereditary form.

The following are examples of cases observed in the earlier stages of acquired syphilis. S. Latimer Phillips (Aural Manifestations of Syphilis, F. R. Packard, *Phila. Med. Jour.*) reports the case of a man who three months after infection became suddenly deaf and developed unilateral facial paralysis. Töplitz (*N. Y. Med. Jour.*, Vol. LVIII, p. 393) reports a case of total deafness in acquired syphilis without any middle ear disease, which developed during pharyngeal syphilis. Politzer observed a case in which the labyrinthine disease occurred on the seventh day after the primary infection (see Text-Book), in another with a gumma on the head, after 21 years.

It would take up too much time to enumerate any more examples of the occurrence of acquired syphilis in the later stages. My own experience is that deafness from acquired syphilis is com-

paratively rare, but that due to the hereditary form is much more frequent.

The symptoms common to both forms are more or less marked deafness, tinnitus, pain in the ear and side of the head. This symptom was observed by Politzer in only one case. Vertigo and defective balancing powers are present in some cases, and when both ears are affected the patient may not be able to walk a few yards without staggering. In unilateral disease the vertigo may be very severe, tinnitus is seldom absent and is liable to come on suddenly as the first symptom. The deafness comes on with or after the tinnitus, is usually severe from the first and rapidly increases. Both ears are usually affected though to different degrees, the loss is seldom unilateral.

Examination of the ear shows a normal membrana tympani or changes which proceed from present or exhausted affections of the middle ear. Politzer has found peculiar, sharply defined, whitish patches on the membrana tympani.

The loss of hearing is in most cases of high degree up to total deafness. Bone conduction is lessened or absent, and when one side only is affected, the tuning fork is heard on the good side. It would seem that in most cases the power of appreciating low notes is the last to become affected and the first to recover, hence the probability that the cochlea is the seat of the affection.

The objective symptoms vary according as the lesion of the membrana tympani, throat, nasopharynx or other syphilitic symptoms are present or absent.

The course of syphilitic affections, according to unanimous observations of many authors, is characterized by the rapid development of disturbances of hearing. Politzer has seen cases in which deafness was almost complete on the third day after the commencement of the disturbance of hearing. The deafness, not uncommonly, however, comes on gradually, remains stationary for a time, and after weeks and months becomes suddenly worse. That even slight concussion of the head has been sufficient to aggravate the disease has been noticed by v. Troeltsch Urbantschitsch, Gruber and Politzer. Oscillation in the hearing distance is rare. Theobald (*Trans. Am. Otol. Soc.*, VI, p. 90) reports a case in which there was a most remarkable variation in the hearing power, sometimes it was quite good, at others, nil.

Those forms of syphilitic affection which are due to hereditary syphilis developing in children with partial or total deafness, which have hitherto been ascribed to scrofula will now be spoken of.

This form of ear disease did not escape the notice of the earlier writers. Sir Wm. Wilde (Diseases of the Ear, 1853, p. 263) was perhaps the first to point out the connection between the affections of the eye and ear, although he failed to detect the common cause. He says, under the head of otitis in connection with ophthalmia, that the "following cases are typical of a form of strumous inflammation of the ear with which I have long been familiar. It sometimes coexists

with and sometimes alternates with the ocular disease. What is termed strumous ophthalmia and also corneitis are forms which the eye affection assumes. Occasionally it is that of iridochoroiditis."

Thus it seems clear that this astute observer had already noticed the connection between hereditary syphilis and eye disease, although he called it struma. These patients as described by him present the now familiar aspect of hereditary syphilis.

Schwartz's review of the literature of this subject (*Arch. f. Ohrenheilk.*, Vol. IV, p. 358, 5th Ed.), quoted by Knapp (*Arch. Otol.*, Vol. IX, p. 146), shows that many authors have described it (i.e., v. Troltsch, Text-Book and *Virchow's Archiv.* XVIII, p. 19, case 5. A. Pagensteder *Deutsche Klin.*, 1863, 41-43. Hutchinson, A Clinical Memoir on Certain Diseases of the Eye and Ear Consequent on Hereditary Syphilis. Hinton, Clinical Remarks on Perforation of the Membrana Tympani and Some other Morbid Conditions of the Membrana Tympani. London, a supplement to Toynbee's Text-Book, p. 461. Wredin, *Monatssch. f. Ohrenheilk.*, 1869, Nov., p. 169).

Hinton states that hereditary syphilis furnished more than one-twentieth of all the aural patients at Guy's Hospital where he had charge of the Outdoor Department. Knapp points out the probable fallacy of this statement for other hospitals for five per cent. of all the cases would furnish 50 cases to every 1,000 of deafness from this cause which is not borne out by any statistics. Both Knapp (loc. cit.) and Kipp have more recently written on this subject. The latter has collected a series of cases in which disturbances of hearing caused by hereditary syphilis were combined with parenchymatous keratitis, notched teeth, and one case with syphilitic iritis.

I need not go more elaborately into the details of these cases which are familiar to all. I presented such a one to this Section, May 8, 1902, in which there was as clear and indubitable evidence of hereditary syphilitic deafness as has here been described. The patient had the evidences of parenchymatous keratitis and iritic adhesions in both eyes, for which he had been long under treatment before the ear affection developed, and was almost totally deaf in both ears. This case is given in detail in the report of the Section meeting (*Arch. Otol.*, Vol. XXXI, 1902). When the ear disease is due to inherited taint deafness it is seldom noticed until the patient is eight years old (Hutchinson). According to Mr. Laidlaw Purvis it occurs in the interval of five years before to five years after puberty. Dalby (Diseases of the Ear) puts the period at from five to fifteen years. The earliest age at which he observed the disease being five and the latest twenty-three years.

It usually occurs at a later period and is accompanied by keratitis or iritis, the latter being a frequent complication of the corneal disease. Other evidences of hereditary syphilis are often

present, notched teeth, sunken bridge of the nose, scars at the angles of the mouth—besides this there is an unmistakable facial expression and pallor sufficiently well known to all who have observed these cases. Two-thirds of the cases are said to occur in females. The eye affection generally precedes that of the ear, exceptions to this, however, occur. Mygind (*Jour. Laryngol.*, 1892, Vol. VI, p. 337) reports such a case and says that they are not rare. Buck reports another (*Trans. Am. Otol. Soc.*, 1887) in a child with hereditary syphilis who lost hearing from labyrinthine disease, and a few days subsequently developed syphilitic eye disease. These occurrences are rare in my observation of the disease, and it may be given as a rule that the eye diseases are the first noticed. And again, they are more common than the ear affections.

Hereditary syphilis of the labyrinth is often accompanied by middle ear catarrh and suppurative otitis. Pritchard and Cheate (*Guy's Hosp. Gazette*, June 7, 1897, and *Arch. Otol.*, Vol. XXVII, p. 415) think that cases of inherited syphilis may be divided into two classes differing from each other in the mode of onset. In the first the deafness sets in without giddiness, the mechanism for equilibrium being apparently left intact. The symptoms take either a subacute or chronic course. In the second form the deafness is accompanied by giddiness and the symptoms may run an acute, subacute or chronic course.

The prognosis for the hearing in acquired syphilis is better than that of the hereditary form. This was stated by Dr. Dench, at the meeting where I presented my case, and it accords with my own observations in this particular. The deafness in acquired syphilis is likely to be permanent in patients of advanced age, or those run down in health, and when the earliest treatment of the disease has been neglected. In young subjects, on the other hand, of good constitution and coming under treatment early the prognosis is better. As a rule but little benefit from treatment can be expected in the hereditary form.

Knapp (loc. cit.) has reported a case the most important feature of which, distinguishing it from the majority of others, is its complete, and, as it seems, permanent recovery.

In conclusion, I give only the briefest outline of the post-mortem conditions. J. Baratoux (*Trans. Int. Med. Cong.*, 1887, Vol. XXX, p. 850) in 43 autopsies on cases of hereditary syphilis found lesions of the middle ear in 27, of the labyrinth in four, and of both the middle ear and labyrinth in 12.

When the middle and inner ear were both affected without pus in the internal ear, there was vascular injection and cellular infiltration of the soft parts of the labyrinth, the ampullæ and the semi-circular canals, and instead of the normal liquid of the canal the parts were bathed in a sero-sanguinolent fluid. The caliber of the vessels was obliterated or diminished by cell proliferation in their walls and sometimes by fibrinous clots. In some cases the labyrinth was congested

and there were hemorrhagic areas on the membranous portion, thus proving that the internal ear can be the seat of hemorrhage in hereditary syphilis.

Crockett (*Bost. Med. and Surg. Jour.*, 1897, Vol CXXXVI, Some Cases of Sudden Deafness from Syphilis) says, that we find changes in the periosteum about the foot plate of the stapes and the cochlea in the vicinity of the latter, and also degenerative changes in the nerve cells and blood vessels of the cochlea, but from clinical evidence he attributes the sudden deafness to effusion in the labyrinth.

In speaking of the treatment it is only necessary to say that this should be mercury or potassium iodide, the same as for the general disease, but I may add that pilocarpine both hypodermically and by the mouth has been used by Dench and others with marked improvement of the hearing.

Bright's Disease.—The last subject, which I shall briefly consider, are those affections of the inner ear which have been observed in acute and chronic Bright's disease of the kidney.

On Nov. 15, 1886, I read before the Section of Ophthalmology and Otology of the Academy of Medicine a short paper on the simultaneous occurrence of neuro-retinitis and labyrinthine disease affecting both eyes and both ears. This case was published in full in the *New York Medical Journal* and I only briefly refer to it here. The case was that of a man, forty-three years old, whom I saw in consultation with the late Dr. Helm, of Sing Sing. This patient had been suffering for two years from chronic Bright's disease and had been under the care of Dr. Helm with various symptoms and manifestations of this disease for some time. On April 12, while on his way home from work he was suddenly seized with an attack of severe vertigo and had to stop a number of times on the way. On reaching home he threw himself on the lounge, unable to turn his head without causing the most intense vertigo. By lying on his back he could obtain slight relief from the vertigo. Lying on the right side made everything go flying and on turning on the left side his face to the wall the vertigo became unbearable. There was loud tinnitus in the left ear. His condition remained much the same with the exception that he could turn on either side without causing such excessive dizziness, but now he found that he was extremely deaf in both ears. Since he became deaf the noises ceased "like a blank." He had some pain in the back of the head. On May 22, when I saw him in consultation, he had had since the first attack, a return of the noises and dizziness, also some pain in the occiput and the eyesight had become impaired. There was now total loss of hearing in both ears. Ophthalmoscopic examination showed the typical picture of Bright's neuro-retinitis in both eyes. Most careful subjective examination of the ears showed no evidence of middle-ear disease. Deafness was absolute.

I expressed my opinion to the doctor and friends that both deafness and impairment of

sight were due to Bright's disease, gave a hopeless prognosis for hearing, but little hope of improvement in sight and said that the case would soon have a lethal termination. The patient lingered till July 22, when he died. Before this he improved for a time and could hear loud sounds with the left ear, the dizziness became less, his locomotion better, and he was improved in every respect until July 19, when he had a sudden hemorrhage into the right pleural cavity which was the immediate cause of his death.

An autopsy in which only the brain and kidneys were examined, was made by Drs. Helm and Husted. Both kidneys were somewhat congested, one was rather larger than normal and looked, on superficial examination, as if the cortical portion was relatively increased and the Malpighian corpuscles were engorged. The brain was decidedly softened. The cerebellum was normal. No tumor, blood extravasation or effusion was found. It is to be most deeply regretted that no examination was made of the inner ears in this case. Both the late Dr. Seguin and myself were telegraphed to be present at the post-mortem but we were unable to attend.

In commenting on the case I said the almost sudden onset of deafness with the general symptoms commonly known as Ménière's disease, and the existence of a neuro-retinitis such as I found in Bright's disease, is certainly very interesting and points to the seat of the disease as being in the labyrinth on both sides and its pathology as being probably hemorrhagic extravasation or effusion.

In the discussion following, Dr. Knapp said he had no personal experience of sudden ear affection in Bright's disease, but the retinal hemorrhages so common in albuminuria would suggest their occurrence in the inner ear.

Dr. Moos had indeed found hematoidin crystals in the cochlea.

Morf, Winterthür, Switzerland (*Arch. Oto.*, Vol. XXVI, XXVII, pp. 444-449), says that Dieulafoy was the first to draw attention to the frequent combination of disturbance of hearing with chronic nephritis. He and his pupils collected 35 cases of aural complications out of 72 patients suffering from acute and chronic Bright's disease. These cases, however, were not sufficiently well examined as to the aural symptoms, hence the exact location of the lesion is only conjectural. Morf collected 53 cases from literature (in which mine was not included) and added three of his own, making 56, in which the connection between the aural disturbance and nephritis was undoubted. These he put in two groups. The first contains such cases as are due to pathological changes in the ear, macroscopic, microscopic or revealed by functional examination. In the second belong such as showed no tissue changes to account for the functional disturbance. In cases of the second group we have neither otoscopic nor functional examination to guide us in locating these lesions. Various theories have been suggested to explain them. Field

thinks that increased arterial pressure causing distention of the labyrinthine vessels and thus increasing pressure in the labyrinth, excites or paralyzes the sound-perceiving elements in the cochlea.

Opinions as to the value of this evidence differ as the theory does not explain those cases where there is no hypertrophy of the left ventricle, and when the heart's activity is weakened. Rosenstein was the first to consider the possibility of edema of the auditory tract as the cause. It is well known that nervous symptoms are very prominent in uremia and various cases have been cited showing that the auditory nerve or its central tracts may be involved. Such a one is given by the author we are quoting.

As in the eye, cases have been seen in which impairment of sight with the presence of albumin in the urine were the only symptoms, so also there are cases where loss of hearing with the changed condition of the urine are the only symptoms of nephritis. A case of this kind is reported by Morf in which, besides the slight visual disturbance, the loss of hearing was the only symptom which led to examination of the urine and discovery of the existence of active kidney disease.

The only statement which I have found relative to the frequency of disturbance of hearing in the course of nephritis is given by Dieulafoy as 50 per cent. which is slightly less than that of vision. The forms of nephritis in which affections of the ear occur is given by the same author in 16 cases, and Morf mentions a special form of kidney disease in 24 out of 56. I must refer those interested to the tables published in his paper (loc. cit.).

The ear symptoms are subjective noises of all kinds, duration and intensity, generally worse at night; deafness varying in degree to complete loss of hearing, which latter, however, is very rare.

As regards the second group of cases, the exact localization of the lesion is not possible, nevertheless there are a number of facts which indicate that we have to deal with the auditory nerve and its peripheral and central distribution. As hemorrhages in the brain are not of rare occurrence in chronic nephritis, especially of the interstitial variety, it is possible for the auditory tracts to become interrupted by such hemorrhage. Affections of this class usually recover.

Did time permit, the category of diseases which cause disturbance of hearing might be still further enlarged as, for example, diseases of the uterus, hysteria and other nervous diseases, etc. But I fear that I have exhausted your patience and I can only add that if I have been able to interest my readers, to show how instructive a field of research this subject opens up, and to induce still further observation and study, which shall add to our knowledge of a hitherto little known subject, I shall be amply repaid for the time and labor spent in the preparation of this paper.

IS ANY DISEASED CONDITION NECESSARILY SELF-LIMITED?*

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THE question of the self-limitation of disease is an important one. If a disease must necessarily run for a certain length of time in spite of all medical efforts, we have only to direct our attention to keeping the patient alive until it has run its course. But if no disease is self-limited, then we have something more to do, to endeavor to abort, cut short, and render lighter all putrid, septic, and contagious disease, which includes typhoid or enteric fever, which has always been supposed to be somewhat self-limited.

I have long been dissatisfied with the idea that typhoid or enteric fever and all contagious diseases must necessarily run for a limited time, because I reasoned that the different stages of what we formerly believed to be self-limited contagious disease appeared to be only the effects of the disturbance of the system, while the microbial or other operating cause was being eliminated. Since my observations with Professor, now Lord, Lister, in the Royal Infirmary of Glasgow, in 1867, I have published in the *New York Medical Journal* and other periodicals, some reports of my attempts to ascertain and destroy the microbial or other operating cause of disease by suitable and safe antiseptics, as well as accounts of what I had done in addition in the treatment of enteric or typhoid fever and all contagious diseases which had come under my care.

My first successful efforts were in typhoid fever. I commenced with an antiseptic, generally sulphocarbolate of sodium, from two to four grains in solution for adults, with two or three drops of tincture of nux vomica. This was administered every six hours, at six and twelve o'clock, alternating with cinchonidine, two or three grains, at nine and three. An improved cathartic pill was given daily, with a warm foot-bath at evening and sinapisms over the abdomen morning and night; for food hot toast-water, half milk, as a drink, or hot bread and milk at meal time, if tolerated; and the patient was kept out of bed during the day, as far as might be safe, in order to secure better rest at night.

The result of this treatment has been that in cases seen very early there has appeared to be an arrest of the disease; indeed it has apparently been aborted. In cases seen a trifle later, when the microbial or other cause had poisoned the system more generally and especially involved the intestinal glands in congestion and incipient inflammation, warm sinapisms all over the abdomen twice a day were used as well as the warm foot-baths, and the disease generally developed no complications; these patients were generally able to be out of bed during the day, and to get about light business or visiting in about a week. But when a case was first seen at a later stage, after the general system had become more intensely

* Read before the Syracuse Academy of Medicine, 1902.

poisoned by the bacterial toxins and the intestinal glands inflamed, so that incipient ulceration threatened, with perhaps cerebro-meningeal inflammation; additional treatment with wet cups to the back of the neck and very rarely a blister to the epigastrium was employed in some cases. Under these conditions my patients have been out in about two weeks as an average.

Now, leaving out of the estimate the aborted cases, which were all seen early, including only—perhaps about one-third of all those treated—the cases seen a little too late for abortion, out in about one week, those seen later still, out in about two weeks, and reckoning cases which I had treated before I used antiseptics as having run about 21 days, the average duration since using antiseptics being about 10 or 11 days. I now find that my experience, up to the present time corresponds with my statements published in the *New York Medical Journal* of August 15, 1885, and April 1, 1891, and in other journals at an earlier date, in which I gave to antiseptics the credit of cutting short typhoid or enteric fever nearly one-half besides aborting one-third of all cases treated in the earliest stages, before the poison had produced much gastro-intestinal disease or infected the system to any considerable extent.

So much, then, is to be credited to antiseptics bearing against the self-limitation of typhoid or enteric fever. I had formerly treated the disease, except for the antiseptics, about as I have since; and as nearly as I can estimate my death-rate has been less than one-half what it was before I used antiseptics, and confined mainly to cases far advanced when I was called, complicated with either intestinal hemorrhage or a wasting diarrhea, with or without intestinal perforation. I should state that in aborted cases, as well as in those out in one or two weeks, I have invariably continued the tonics and antiseptics in gradually decreasing doses for about two weeks after the patients are out; the tonics to keep up the strength and the antiseptics to destroy the germinating spores. The shell of these spores being the most resisting substance in the material world,* and resisting all antiseptics until the spores germinate; hence the necessity of taking measures to prevent a relapse in all microbial diseases which are propagated by spores.

Enough appears to have been accomplished to show that, the cause out of the way as far as possible, there is not necessarily any self-limitation to the duration of typhoid or enteric fever; though when the cause continues to operate, the elimination of the poison, with no special complication, except the intestinal, will usually require perhaps 21 days.

My observations in the treatment of strictly contagious diseases, such as diphtheria, scarlatina and rubeola, correspond very nearly with those just described in typhoid; several cases under similar early antiseptic treatment, having ap-

parently been aborted; two at least of scarlatina, several of diphtheria, and some among the other diseases treated. In regard to using antiseptics with tonics, either instead of or in addition to what I had formerly used to tide through such diseases, supposing them self-limited, I am fully satisfied that the average duration of all contagious diseases treated by me has been less than one-half what it was before I used antiseptics; the complications have been fewer and the death-rate much lower, especially in diphtheria.

These statistics in relation to strictly contagious diseases appear to indicate a slight improvement over my published account of observations in 1885, 1891 and of earlier date, concerning my use of antiseptics.

In view of the foregoing facts in relation to typhoid or enteric fever, as well as all contagious diseases that have fallen under my observation, I am thoroughly convinced that none of them necessarily has self-limitation, as was formerly supposed. And hence, if this is true, it evidently becomes our duty to treat the patients to cure, by aborting, cutting short, and rendering lighter contagious diseases as well as all others, instead of merely trying to get them through imaginary self-limited diseases, as we formerly did, because we did not know the cause, or, in any case, how to destroy it, as we do now.

And further, as all contagious diseases must necessarily have originated without exposure to a person thus diseased, we have a right to infer that they all have a similar origin now, and in many cases are not caused by contagion. Especially does this appear to be the case in phthisis pulmonalis, now regarded as more or less contagious. It is probable that strictly contagious diseases are communicated from one person to another far more frequently than they arise spontaneously, for the reason that a person thus diseased furnishes a greater source of the poison, whatever it is, than any other source likely to be encountered. On the contrary, consumption, if strictly communicable from one person to another at all, is with far more frequency spontaneously contracted, and, I am convinced, from various vile habits, from irregular eating, or the consumption of improper food, from some or all of which the system becomes depraved, thereby preparing the grounds for the action of the microbial matter, if not actually producing it. Without such predisposition, the poison in my opinion, would very rarely, if ever, develop tuberculous disease; the physical condition thus furnishes the predisposition, if it does not generate the poison causing the disease, far more frequently than it communicates it from one person to another in ordinary health, however much exposed.

And while so far as I know, no one claims any self-limitation in phthisis pulmonalis, as in enteric fever or any of the strictly contagious diseases, this claim in the case of any disease is but an apology for bridging over our ignorance which we must abandon by the exercise of common sense, in accordance with facts; and conclude that if

* Fall's Bacteriology.

consumption is ever eradicated, as well as all other diseased conditions of whatever name, it must be largely accomplished by a return to the observance of the laws of life and health which we, as physicians, should of course follow and teach. For it was by various departures from the laws of our being that the multitude of diseases originated during the past ages; increasing much more rapidly in the regions and during the ages in which the various imprudences have been more practised, as a glance at the past 5,905 years unmistakably indicate. I have been curious enough to trace out historically, the fact that human life has been cut short, from nearly a thousand years to an average of less than 50 through disregard of the principles of right living; and if the microbes and other poisonous causes of disease have not been thus produced, which is probable, the human system has been thus depraved and rendered susceptible to their poisonous influences. As guardians of health and life we must, if we can, not only cure diseases understandingly, but warn all under our influence to avoid the causes, such as the habitual use of alcohol, opium, tobacco, and all other dangerous filthy habits, deleterious to life and health. We should always bear in mind the fact that there is not necessarily self-limitation in any diseased condition, so that we may the more earnestly direct our efforts for aborting, cutting short, and rendering lighter all putrid, septic, and contagious diseases, as well as all others. Our success will then depend largely upon the stage of the disease in which we begin our treatment; as we might rationally expect, on common sense principles. Let us try it, then, perseveringly; and let the clergy, by virtue of their calling, kindly aid us in our efforts thus to raise the standard of human excellence above that of unnecessary disease and untimely deaths.

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MEDICAL PROGRESS.

SURGERY.

Gall-stones Impacted in the Lower Part of the Common Duct.—The transduodenal route, otherwise called duodenocholedochotomy, applicable in cases of impacted gall-stones in the lower portion of the common duct, was described first by McBurney in 1891. The following conclusions concerning this method, after twelve years of general use, are offered by C.-V. CHIENHOUS (Ann. of Surg., Dec., 1902): (1) The transduodenal route has a well-defined place in the surgery of obstruction of the common duct produced by gall-stones; (2) lithotomy transduodenalis, first advocated and practised by McBurney in 1891, either after his methods, that is, with the excision of the papilla, or Collins' method, that is, dilatation of the papilla, is the method *par excellence* for all cases of gall-stone impacted at or near the papilla opening, as soon as experiments of manipulation, to press the stone into the duodenum by bimanual manipulations, have proved unsuccessful; (3) choledochotomy transduodenalis is indicated for stones impacted in the retroduodenal portion of the common duct, or before the diverticulum of Vater, as soon as efforts to dislodge the stone up

into the supraduodenal portion have proved futile; (4) in all cases where choledochotomy transduodenalis has been performed, it is advisable to suture the common duct to the duodenum to avoid infection (choledochoduodenostomia interna); (5) choledochotomy transduodenalis seems to be more advisable than choledochotomy retroduodenalis, because it can be more easily performed, and the integrity of the pancreas is not interfered with; (6) it has not been proven by statistics that transduodenal choledochotomy has a greater percentage of fatalities produced by septic infection than supraduodenal choledochotomy. Further contributions in this direction are desirable for the purpose of procuring definite conclusions. Most of the cases where sepsis was the cause of death of the patient after an operation on the common duct, were cases of infection of the bile passages before operation, and the method of operation was not responsible for the fatal result.

Ureters.—The following conclusions from studies of the ureters will make instructive reading for any one. They are the result of considerable research by A. von L. BROKAW (Ann. of Surg., Dec., 1902): (1) The ureter is not a uniform calibered tube; (2) it consists in general of three isthmuses or sphincters located at points in the ureter where projecting adjacent structures compromise; kink its lumen. The ureteral lumen is compromised by (a) the distal renal pole projecting the ureter medianward, producing what the author terms the proximal isthmus, a sphincter or neck of the ureter; (b) the ureteral lumen in compromised at the point where the vasa iliaca project the ureter ventralward, producing what the author terms the middle isthmus or sphincter, the flexura iliaca ureteris. The middle ureteral isthmus is due to the increased ventral projection of the ureter by the vasa iliaca on assuming the erect attitude (man, erect bimana). Quadrupeds do not possess the middle isthmus, and consequently less lumbar ureteral spindle; (c) the lumen of the ureter is compromised at the point where its distal end penetrates obliquely the muscular wall of the urinary bladder; (3) compromised lumen by isthmuses or sphincters induce ureteral dilatations—reservoirs or spindles. There is a ureteral reservoir proximal to each ureteral isthmus, e.g., (a) ureteral pelvis proximal to the proximal isthmus or neck; (b) lumbar spindle proximal to the middle ureteral isthmus; (c) pelvic spindle proximal to the distal ureteral isthmus in its vesical wall; (4) the ureteral spindles are more pronounced in woman than in man on account of the proximal and distal arteria ureterica having an excessive or periodic hyperemia during reproductive life (pubertas, menstruation, gestation, puerperium and climacterium). Consequently, in senescence, when its proximal and distal arteria ureterica becomes affected, with arterial sclerosis or calcification, lack of nourishment will induce pathologic dilatations of the lumbar and pelvic spindles; (5) calculi lodge at the ureteral isthmuses; (6) torsion of the ureter or kink may easily compromise the ureteral neck or proximal ureteral isthmus; (7) surgical interventions on the ureter should be performed at the ureteral reservoirs or spindles on account of ample lumen and wall; (8) pathologic conditions of the ureter lie mainly in defects of the ureteral wall (inflammatory products, paresis, tuberculosis, etc.), producing deficient peristalsis, or in the mechanical obstruction to the ureteral stream (calculus, kink, torsion, stricture); (9) so long as the ureteral peristalsis is not interfered with, and especially the ureteral stream is not obstructed, the ureters perform their function; (10) as soon as any mechanical obstruction to the ureteral stream arises (as kink, calculus, stricture) the non-drainage induces residual deposits, with resulting accumulations of bacteria, whence

the vicious circle occurs in the tractus urinarius exactly similar to vicious circles arising from obstructions in the pylorus or the biliary ducts; (1) the ureter is an independent organ, conducting the urine from the kidney to the bladder by rhythmical waves, regardless of altitude or force of gravity. It is an elongated duct, interpolated between kidney and bladder with similar functions to a bladder, a reservoir; (12) the ureter being located in a universally loose areolar bed, and being longer than the distance between its proximal and distal ends, is capable of an extensive range of motion in pathologic conditions or for surgical intervention; (13) the irregular caliber of the ureter, dilatations (reservoirs, spindles), and constrictions (isthmuses, sphincters) is an hereditary heritage from the Wolffian body enhanced by environments.

Enlarged Prostate.—In an extensive review on this interesting and uncertain question, L. R. G. CRANDON (Ann. of Surg., Dec., 1902) draws the following conclusions as to its cause: The underlying cause of the usual forms of prostatic enlargement and of certain forms of prostatic atrophy is a slow formation of new connective tissues due to infection or to infection aggravating a senile degenerative process; (2) the gonococcus is probably most often the special infection, because (a) of its great frequency; (b) other inflammatory causes are not common in the parts in question; (c) a great similarity exists between the histology of gonorrheal processes and those seen in senile prostates. (3) neoplasms, fibromyomata, and adenoma occur, but may be called rare.

Hand Disinfection with Sublamin.—Extensive bacteriological examinations with sublamin, a combination of mercuric sulphate with ethylenediamin led D. ENGELS (Arch. f. Hyg., Vol. 45, No. 4) to believe that the drug forms an excellent disinfectant for the hands, for in 2 to 3 per cent. aqueous solution it does not irritate the hands, since it can penetrate into the depths of the skin and there kill all germs, and since all pyogenic germs readily succumb under its influence. It is very readily soluble in water and nickel-plated instruments are not attacked by it. It is more difficult to obtain a strong alcoholic solution but this is even more efficacious than the aqueous; a two pro mill. solution here seems to act better than a stronger one. The greater penetrating powers of sublamin as compared with sublimate probably depends upon the organic radical, for ethylenediamin resembles ammonia in its softening and dissolving properties without being irritating. In strength one part of sublimate corresponds to 1.7 of sublamin, yet the latter is only one-tenth as poisonous. There is no reason why it should not entirely replace sublimate in hand disinfection.

Anesthesia.—The old question, which of the two, chloroform or ether, is the better anesthetic, is discussed in an interesting article by O. WITZEL (Münch. med. Woch., Dec. 2, 1902). To begin with, the author states that it is impossible to modify chloroform itself or its method of administration so that this cardiac depressant is rendered harmless. It is therefore more logical to resort to the stimulant ether in such form that its objectional features are removed. It is best to precede the narcosis by means of a small dose of morphine as it removes all element of fear from the patient. The ether is then given by the drop method, like chloroform; thus suffocation is prevented and the blood is not overcharged with the drug, although enough may be given to produce a narcosis. To prevent pneumonia, three points must be borne in mind: (1) Disinfection of the mouth and air passages. By this, aspiration of septic matter is prevented, and thrombi, if they occur, remain innocuous. (2) Proper position of the patient. The

mouth should be at a lower level than the entrance of the larynx and the chest at a higher level than the neck and head. (3) Ventilation of the air passages by systematic respiratory motions after the operation. Many details of narcosis are regulated by the condition and disease of the patient. The pulse is studied several days before the operation and, if necessary, the patient receives digitalis and strophanthus for a short period. Alcoholic patients are not put upon the operating table before they have received an enema containing 50 grams of cognac. The urine must be examined carefully and in many cases it is advisable to first wash out the stomach. All instruments and drugs should be ready and at their proper place so that a collapse may be dealt with speedily. After the operation is over, the patient must be carefully watched; sudden chilling should be particularly prevented. Fresh air and frequently washing out the mouth diminishes the tendency to vomit, and if necessary, the stomach may be washed. If the patient cannot take deep inspirations on account of pain, he may receive small doses of morphine.

Leucocytosis in Appendicitis.—If the number of leucocytes during an attack of acute appendicitis remains normal or undergoes only a slight increase, S. COSTE (Münch. med. Woch., Dec. 9, 1902) finds that the inflammation remains restricted to the appendix or there is a serous exudate, and the course of the disease is mild. Yet a fecal concretion may perforate at any time and cause a purulent peritonitis, and this will not show in the number of leucocytes but in the increasing severity of symptoms. If numbers above 22,000 are obtained, an abscess is certain. With purulent peritonitis, the number of leucocytes will only rise if the system possesses enough power to withstand the infection. A sudden decrease after an initial rise, is a very bad prognostic sign.

Treatment of Perforations and Tears of the Gall-bladder.—Hitherto two methods, outside of tamponade, have been employed in the treatment of tears of the gall-bladder. These are cholecystorrhaphy and cholecystectomy. It was soon found, however, that these are either inefficient or too far-reaching in their results, hence an attempt was made to transplant the omentum into the gap. The method of L. BALDASSARI and A. GARDINI (Münch. med. Woch., Dec. 9, 1902) is superior, since traction on the omentum is prevented and since a more resistant wall results. The authors use a flap of peritoneum and muscle cut out of the abdominal wall in the vicinity of the laparotomy wound. The muscular layer is turned inward and the serous layer outward and the entire flap fixed by sutures. In a number of experiments conducted on dogs the recovery was uneventful, and when the animals were killed later, it was found that the flap had united perfectly with the rest of the gall-bladder, whose interior was normal in every way.

MEDICINE.

Exophthalmic Goiter.—The clinical history and symptoms of 120 cases of this disease is the subject of an instructive paper by G. R. MURRAY (Lancet, Dec. 13, 1902). In practical application the most important subject is the treatment. Under this heading he offers the following: The treatment of exophthalmic goiter is a large question and time will not admit of a detailed account of the treatment adopted in all his cases. He therefore confines himself to a short account of the lines of treatment which have proved to be most successful. No hard-and-fast lines may be laid down for the treatment of this disease. The symptoms vary so much in different cases that in each one the treatment has to be adapted to the special symptoms present and the social position of the patient. In the first place comes the gen-

eral hygienic treatment of the patient. If the symptoms are severe, absolute rest in bed for three or four weeks is essential. In cases in which the nervous symptoms are predominant, or when there has been rapid emaciation, rest in bed may be combined with isolation, liberal feeding (especially with milk) massage and electricity; in other words, a course of what is known as the "Weir-Mitchell" treatment is of the greatest service. In less severe cases, and in cases in which rest in bed has already been carried out, it is well to regulate the patient's mode of life as far as circumstances permit. At least 12 hours should be spent in bed, from 10 P. M. to 10 A. M., breakfast being taken in bed. In addition to this, in many cases the patient should lie down from 2 to 3 P. M., and from 6 to 7 P. M. A quiet life in the country or at the seaside, as free as possible from excitement or effort, is most suitable. As much time as possible should be spent in the open air, partly reclining on a deck-chair and partly in gentle walking exercise, which may be gradually increased from half a mile to three or four miles a day, according to the progress made. As sufferers from exophthalmic goiter do not feel the cold much and are not likely to catch cold easily, they can spend much time out of doors nearly all the year round. Electricity is very useful in many cases, but is not sufficiently applied, owing to the modes of application recommended being too elaborate. The faradic current may be easily and efficiently employed by a method which was first described to the author by Sir Victor Horsley. Two flexible metal electrodes about four inches long and two inches wide, covered with wash-leather, which are connected by a small strap and buckle on each side, are moistened and accurately applied to the neck. One electrode is applied in front over the thyroid gland, and the other in back, on the neck. The electrodes are connected with the secondary coil of a small, dry-cell faradic battery, and a sufficient current is turned on to produce a distinct prickling sensation. This should be applied for an hour each night and morning for several months. Not only do the patients feel relieved for a while after its application, in this manner, but he has seen steady improvement take place under its continued use. In many cases no special diet is necessary. When there is any emaciation a liberal diet is necessary, which may be supplemented by two extra pints of milk in the day. If there is great emaciation, forced feeding may be necessary. In a great many cases, especially those that are seen in hospital out-patient practice, we can unfortunately carry out little more than medical treatment, and often in circumstances which are not at all favorable to recovery. Belladonna was frequently prescribed, and was useful in some cases, but the author has often been disappointed in its results. To be of use in exophthalmic goiter, any line of treatment should be steadily followed for several weeks, or even months, and patients often dislike to continue taking belladonna in sufficient doses to produce physiological results. Convallaria has proved useful in cases in which the frequency of the pulse has been very high, and is more effectual in lowering the pulse than any of the other cardiac remedies. Bromides are useful in cases in which there are marked nervousness and tremors. Arsenic is useful in nearly all cases, and may be combined with other drugs with advantage. The best results are obtained by giving small doses of three or four minims of Fowler's solution three times a day for a month or two, or for the first three weeks of each month for five or six months. Of the animal extracts, thyrox and suprarenal extract have both been of use. Thyroid extract is harmful, as it often exaggerated the symptoms, and should not be given in exophthalmic goiter. Special measures are frequently required for the treatment of

urgent symptoms. The sudden attacks of diarrhea were readily controlled by laudanum and dilute sulphuric acid. Severe attacks of palpitation with very rapid pulse yielded to the application of an ice-bag to the pericardial area. Persistent vomiting in acute cases is difficult to treat. On the whole, rectal feeding and the administration of morphia, either subcutaneously or by the rectum, gave better results than other lines of treatment.

Eleven Acute and Eighteen Chronic Cases of Influenza.—During the summer of 1902 an investigation was undertaken to determine by examination of sputum the cause of cough and expectoration in cases in which examination for tubercle bacilli had proved negative. In one hundred out-patient cases thus examined by F. T. Lord (Bost. Med. and Surg. Jour., Dec. 18, 1902) influenza bacilli were found in 60. In 11 acute and 18 chronic cases influenza bacilli were present in overwhelming numbers. W. H. Smith's stain was used in order to bring out the gram-staining and gram-decolorizing organisms in sharp contrast. For cultivation of influenza bacilli Lord used blood-agar, made of 2½ per cent. agar, to which was added one-third of its bulk of human blood. It would appear from Lord's investigations that infection with influenza bacilli is prevalent apart from epidemics of influenza. Grassberger, working in an "influenza-free" period, also found influenza bacilli in the sputum and bronchial pus of 30 cases. Apart from epidemics there is nothing distinctive in either the acute or chronic clinical manifestations of influenza and the diagnosis can be made with certainty only by the examination of the sputum. The duration of the cough and expectoration after an attack of acute influenza does not usually exceed six weeks, but in some cases the duration is months or years. Many cases formerly classed as chronic bronchitis probably are chronic influenza. Cases of chronic influenza with paroxysmal dyspnea may closely resemble asthma; in these cases there is no apparent climatic or atmospheric irritation and ordinary asthmatic remedies fail to relieve. Neither Curschmann spirals nor Charcot-Leyden crystals are found in the sputum. The persistence of influenza bacilli in the respiratory tract does not often lead to marked emaciation. The subjects of such infection, harassed by a troublesome cough, more or less abundant sputum, dyspnea, occasional rises of temperature for brief periods, localized bronchitis, and doubtful or certain, signs of consolidation, are not infrequently supposed to have pulmonary tuberculosis.

Syphilis in the Barber Shop.—When one considers how few precautions are taken to prevent the communication of syphilis from one patron of the barber shop to another it is indeed surprising that so few instances are on record of this disease being acquired by the barber's utensils. A. FANONI (Med. Rec., Dec. 13, 1902), reports a case in which a chancre developed in a small razor wound within two or three days, and was followed by rather severe secondary symptoms in about one month. It is interesting to note that these cases usually require very active treatment on account of their virulence.

Pulmonary Syphilis Simulating Tuberculosis.—Several prominent authorities have recently called attention to the fact that pulmonary syphilis may so closely resemble tuberculosis, both in regard to the clinical symptoms and physical signs that a differential diagnosis is difficult to make, and is not usually considered on account of the confident belief that the tubercle bacillus is the efficient cause of the trouble. H. W. BERG (Med. Rec., Dec. 13, 1902) has met with several undoubted cases of pulmonary syphilis, and believes that it is a much more frequent condition than most authorities would give us to understand. The more or less sub-

acute variety of syphilitic pneumonia and syphilitic bronchitis, properly so-called, is apt to occur in the secondary stage. Patients in the tertiary stage may show either a bronchitis, a stenosis of certain bronchi due to cicatricial contractions, bronchiectatic cavities filled with purulent material partially or wholly due to a mixed infection, gummata of various sizes and in the various stages of degeneration, or either a generalized or localized interstitial fibrosis. It will thus be seen that, so far as physical signs are concerned, syphilitic lesions of the lungs may be capable of causing considerable confusion, especially as they may be situated at or near the apices or around the roots of the lungs. The problem is still more confusing, for the two processes may occur at the same time, and the presence of a few tubercle bacilli in the sputum is very liable to at once detract one's attention from the possibility of a syphilitic accompanying process. The symptoms also are by no means diagnostic, but considerable help may sometimes be had from a close study of them. The cough is not so constant or persistent, owing to the small amount of sputum; hemorrhages are not so frequent, although they may occur; hectic fever is not so common but may be present, especially if bronchiectatic cavities exist; loss of weight is less marked than in tuberculosis, the anemia is not so great and night-sweats are seldom complained of. The absence of tubercle bacilli in the sputum is an important negative point while the presence of the bacilli in a slowly progressing pulmonary disease with a typical syphilitic history does not exclude the necessity of placing the patient upon an anti-syphilitic regimen. In another class of cases the symptoms and signs resemble those of a croupous or bronchopneumonia, but the symptoms are rarely so acute, and instead of a rapid convalescence the case continues as one of delayed resolution, and the various changes in the lungs enumerated above may follow unless an anti-syphilitic treatment is instituted. In regard to the medication of these cases it is well to remember that the success of the treatment will be an important factor in the confirmation of the diagnosis, for although syphilitic processes usually respond readily to proper treatment, tuberculous lesions are, as a rule, made much worse by the iodides, and persistence in their use may result in converting a chronic miliary tuberculosis into an acute phthisis. The iodides should therefore not be continued longer than two or three weeks, unless the desired benefits are observable.

Adrenalin as a Stimulant.—To determine the value of adrenalin as a stimulant in vasomotor depression, M. S. MILES and W. MUHLBERG (Cleveland Med. Jour., Dec., 1902) have made a series of experimental researches in animals. In certain cases of circulatory collapse the usual heart stimulants have little effect, because it is not the heart which is at fault, but the vasomotor system. Adrenalin has been considered an agent which can readily overcome vasomotor shock by acting directly on the heart and arterioles, but is unfortunately evanescent in its action when injected into the blood. The aim being to make the action more prolonged and less powerful, the authors have extended their research in this direction. They produced a condition of shock in rabbits by excessive quantities of an anesthetic (ether). When more or less complete motor paralysis was present injections were given in the jugular vein with the object of increasing the blood-pressure, of digitalin, strychnine, whisky, salt solution, and adrenalin. Digitalin, whisky and strychnine were without effect on the blood-pressure. Normal saline caused a slight fall in the pressure and a decided slowing of the heart rate. The 1-1,000 solution of adrenalin was diluted 10 times, and one-half to one c.c. injected. An

immediate and powerful rise of blood-pressure resulted, which remained up for about five minutes. The rise was often higher than the original pressure before the ether poisoning. The sinking was gradual, but not below the original level. The subcutaneous injection was not followed by so prompt an action. The pressure only rose when massage was practised at the site of injection, probably hastening in this way the process of absorption from the subcutaneous lymph-spaces. The authors draw the following conclusions from their experiments: (1) Adrenalin may be of value in so-called heart-failure during anesthesia, etc., when ordinary stimulants fail; (2) it is more likely to succeed where the respiratory centers are not paralyzed, since adrenalin does not appear to be a very powerful respiratory stimulant; (3) when used it should be given subcutaneously and slow massage done at the site of injection; (4), that dilution with normal saline solution by making absorption slower, causes a more prolonged and less energetic rise in the blood-pressure; (5) bad after-effects were not observed, but the danger from secondary hemorrhage as a result of the high pressure must be borne in mind; (6) adrenalin, subcutaneously, is indicated on theoretic grounds for the vasomotor collapse following cocaine or chloroform poisoning, and possibly shock after operation.

A Case of Progressive Pernicious Anemia.—This case, reported by Dr. MYSEL (Pract. Vratsh, No. 44, 1902), is interesting, in the first place because, while every other remedy failed, feeding with raw bone marrow gave positive temporary improvement. Further, the autopsy showed necrosis and extravasations in the pancreas. This necrosis the author considers to be secondary to the general malnutrition of the vascular system and the tissues in general.

Late Recurrence of Carcinoma.—On the cancer material, in the first surgical clinic in St. Petersburg, during the last thirty years, Dr. GEINATZ (Roussky Vratsh, No. 44, 1902) studied the question, as to how soon after an operation for carcinoma a patient may be considered radically cured. He investigated 709 cases of carcinoma. Of these 122, or 17.2 per cent., were treated for recurrence of the disease. Of these last, in 15 per cent. the recurrence took place later than three years after the first operation, some as late as 19 years after the first operation. He concludes then that Volkmann's rule, that a carcinoma patient who is well three years after an operation may be considered radically cured, is erroneous, and a recurrence may take place through the whole life of the patient.

Disease of Mice Produced by an Anaerobic Bacillus.—In the course of extensive examinations of mice during the last epidemic of plague in Odessa, Dr. SREPHANSKY (Roussky Vratsh, No. 47, 1902) discovered a disease of mice so far not described. This process involves sometimes only the lymphatic nodules, sometimes also the skin (atrophy) and muscular system. The disease clinically resembles leprosy. Morphologically, the microbe is a bacillus three to five microns long, stains similarly to tubercle bacilli and does not grow on the usual media.

Infective Arthritis.—Inflammation of the joints of an infective character has been known in pneumonia, typhoid fever, scarlet fever, influenza, erysipelas, glanders, acute rheumatism, and the ordinary surgical infections. There are certain other examples of infective arthritis, which may not be directly classified, and among the others, acute arthritis of infants is the most common. Taking the disease of infective arthritis as a whole, the following are points on prognosis and treatment offered by H. MARCH (Lancet, Dec. 13, 1902). In the first form of infective arthritis mentioned, namely,

that which consists of a transient synovitis, arthritis soon subsides, often in the course of four or five days, and the joints completely recover. A suitable splint and warm fomentations will be the only treatment required. In the second group, in which the cavities contain fluid, the treatment called for is clear. It is the same as that which should be employed in gonococcal infection, where infusion has occurred. The fluid must at once be removed and the joint freely irrigated, either with carbolic lotion, one in 100, or with mercurial solution, of which, perhaps, the best form is biniodide, one in 1,000. To evacuate the fluid a full-sized trocar and cannula may be used, and irrigation may be readily performed through the cannula, or the joint may be opened by an incision at the side of the patella. If the fluid proves to be already purulent, the joint must be freely opened and the finger inserted to break down any adhesions which may have formed and behind which pus may be imprisoned, and then thorough and copious irrigation must be carried out. The immediate improvement and complete recovery observed in Mr. Page's cases after evacuation and irrigation was very striking, and it has its parallel in what many surgeons will have observed in cases of pyemia, namely, that when a joint has become distended with pus, if it is freely opened and copiously irrigated it may forthwith undergo a startling improvement; and, if the patient survives, may completely recover and retain absolutely free movement. In the third or plastic form, prognosis is distinctly unfavorable. The arthritis tends, as has been said, to extend over a considerable period. A large amount of new fibrous tissue is developed, both between the articular surfaces and in the peri-articular tissues, and the joint is converted into a massive scar, so that firm fibrous ankylosis, which may subsequently become bony, results. This strong tendency toward ankylosis is, the author thinks, one of the especial characteristics of infective arthritis. Nor are any means known at present by which it can be prevented. As to treatment, the best that can be done is to keep the joint, for the time being, at complete rest; indeed, the pain is such that no alternative can be thought of. Warm boric or opiate fomentations are required during the most acute stage, but when swelling and heat have somewhat subsided, a succession of small blisters will alike relieve pain and promote absorption. Later still, massage will be required to remove the swelling of the soft parts. A very important question is whether, in these cases, manipulation should be employed with the object of restoring movement. In the slighter cases this is advisable, but when the inflammation is either severe or prolonged, *a fortiori*, if it is both, the joint becomes filled up with cicatricial tissue and the restoration of movement is impossible. Forcible manipulation in such condition is not only useless but definitely mischievous, for it renews irritation and promotes the formation of scar tissue. Moreover, he has seen instances in which manipulation has left a joint, previously free from pain, so sensitive and painful for many weeks that it was necessary to keep it at complete rest, so that instead of being diminished, stiffness was increased. In the fourth group prognosis is highly unfavorable, for the arthritis is but one of the manifestations of a general septicemia and is often associated with other lesions of the gravest kind. Often the arthritis is rendered comparatively unimportant, except for the suffering it entails, by the speedy fatal termination of the case. In those rare cases, however, of which the septicemia is of a milder type and other local developments are absent, if the joint is at once freely opened and irrigated, repair may take place, sometimes with ankylosis, sometimes with restoration of considerable or even complete, free movement.

Heart Disease Cells.—The significance of these cells, called by the Germans "heart-failure cells," in the sputum is discussed by R. C. REGOLA (Gazz. Osped., Nov. 23, 1902) and are described, as he saw them in cardiac and pulmonary cases, as large round or oval polynuclear cells containing many granules and reddish-yellow pigment, presumably derived from the blood. These cells were seen most frequently in mitral disease; though they were present also in disease of the aortic valves and in pulmonary affections. They are believed by the author to have their origin in pulmonary congestion or small hemorrhages in the parenchyma of the lung; and their prognostic significance depends upon their persistence in the sputum and their quantity. Their presence in the blood-streaked sputum of cardiac patients, while not considered pathognomonic, are thought to have a certain diagnostic value especially in those cases in which morbid conditions of the lung such as emphysema, chronic bronchial catarrh, etc., or of the heart itself as in chronic myocarditis, pericarditis, etc. render diagnosis through physical examination alone, difficult.

Formalin in Pulmonary Tuberculosis.—As a therapeutic adjunct in the treatment of pulmonary tuberculosis formic aldehyde possesses certain distinct advantages according to W. G. SHALLCROSS (Phil. Med. Jour., Dec. 13, 1902). It is gaseous, diffuses readily with air and is soluble in water. It is the nearest approach to a pulmonary antiseptic, is non-toxic, non-irritating and stimulant when administered in the proper manner. It lessens the absorption of the toxins, reduces pyrexia, relieves nervous symptoms and night-sweats and sharpens the appetite. The writer has devised a new form of inhaler, simple and readily constructed. It consists of a wide-mouthed "salt" bottle of a pint capacity, closed by a tightly fitting cork perforated with two holes. Through one of these passes the glass inlet tube reaching within an inch of the bottom. Through the other is passed a shorter tube bent at an angle extending just within the neck of the bottle. To the latter is attached a piece of rubber tubing several feet long with a mouth-piece at the end. This may be made from an atomizer bulb by cutting off one end. A piece of wire netting about four by 15 inches is covered with cheese cloth rolled tightly together and placed in the bottle. The liquid is then poured in in sufficient quantity to moisten the gauze and leave a slight excess at the bottom. The most satisfactory fluid found consisted of equal parts of 40 per cent. commercial formaldehyde and 95 per cent. alcohol. The inhaler is used for two to three hours daily, from 15 to 30 minutes at a time, at regular intervals.

Orthoform in the Diagnosis of Gastric Ulcer.—The value of orthoform in the diagnosis of the above condition depends upon its local anesthetic effect when it comes in contact with exposed nerve endings as in burns, ulcers, abscesses, etc. It is non-toxic even in doses of one dram daily and on account of its slow-absorption its effect persists for many hours. F. H. МУРОМОВ (N. Y. Med. Jour., Nov. 29, 1902) has employed it in several instances and believes that it is a great help in diagnosing gastric ulcer, for it is powerless to relieve pain when applied to an intact skin or mucous membrane and hence will be inefficient when the gastralgia is due to other causes. Other methods are mentioned, such as the use of a teaspoonful of salt dissolved in a glassful of water taken when the stomach is empty. If an ulcer is present the pain will be greatly increased. A galvanic current may be employed with the negative pole applied over the left hypochondrium and the positive pole over the dorsal spine. Severe pain is excited so soon as the current passes through

the exposed surface of the mucous membrane. The continuous use of orthoform is seldom necessary because, as a rule, the gastralgic attacks when caused by ulcer generally cease so soon as the patient is put to bed and restricted to liquid food.

Acute Circumscribed Edema.—This condition was studied and sharply characterized by Quinke in 1882. In his description one finds the picture of circumscribed edematous swellings, occurring chiefly on the extremities in the vicinity of the joints, but also on the back and face. The skin and subcutaneous tissue are involved and the individual swellings measure from 2 to 10 cm. in diameter. The normal color of the skin is usually retained; at times it may be unusually pale or slightly redder than normal. There is some tension and the patient experiences a throbbing sensation. The swellings appear and disappear rapidly, lasting hours or at times a few days; recurrence is frequent. The general condition of the patient is not altered. The condition is evidently nearly related to urticaria. If acute circumscribed edema attack the trachea or larynx death may result; but the rapid disappearance of the swelling generally acts as a safeguard. There is some difference of opinion about the prognosis in these cases; Cassirer considers the prognosis absolutely good, but this view cannot be accepted by those who have studied the cases reported by Osler, Wardrop Griffith and the cases now reported by F. MENDEL (Berl. klin. Woch., Dec. 1, 1902). The hereditary nature of the malady has been described before. Mendel confirms this by his account of nine cases occurring in a single family in four generations. The patients were all otherwise healthy and the disease must be regarded as a condition *sui generis*. Six of the nine patients succumbed, all in practically the same manner, and Mendel is not hopeful concerning the ultimate cure of the three members of the family who remain and who suffer from frequently recurring circumscribed edema in various parts of the body including the mucous membranes. Experience has shown that the attacks increase in frequency and intensity with advancing age. It is necessary to distinguish this disease from the symptomatic edema occurring in nervous disorders such as hysteria, syringomyelia and hemiplegia. From urticaria it is possible to differentiate acute circumscribed edema, for while giant urticaria may somewhat resemble the latter condition, the etiology and clinical history are entirely different. In urticaria other eruptive features may be present and the throbbing is more marked. The edema begins in the skin itself in urticaria and in the subcutaneous tissue in acute edema; in the early stages of the latter the skin can be moved freely over the deeper swelling. In urticaria relation to some irritant can usually be traced; an article of diet or a drug may be the cause. In acute circumscribed edema such factors are wanting. Trauma cannot precipitate an attack, but if trauma occur at the beginning of a paroxysm it may determine the localization of the serous infiltration. The disease was long held to be an angioneurosis, but Mendel succeeded in causing a pause of several years in one case by a liberal use of laxatives, and for this reason is inclined to the theory of auto-intoxication. Aspirin also proved useful, presumably because of its antiseptic action in the intestinal canal. The most promising therapy seems, indeed, to be that which is based upon the theory of auto-intoxication.

The Viscosity of Sputum and Its Relation to Pertussis.—The circumstance that a decrease in the intensity of attacks of coughing does not go hand in hand with a diminution in the viscosity of the sputum (a thicker sputum is much more frequently repeated in light cases than in severe ones) is of weight in the ther-

apy of pertussis, according to L. NEUMANN (Arch. f. Kinderheilk., Vol. 35, Nos. 1 and 2). He suggests that the use of expectorants that produce a liquefaction of the bronchial secretion might have some influence on the course of a case of pertussis. His observation that severe attacks are accompanied by a sputum of low viscosity and that a moderation of the severe paroxysms coincides with a thickening of the sputum, indicates rather that the attack of coughing stands in relation to the low viscosity of the pharyngeal and tracheal secretion and that the moderating influence on the severe paroxysms might be sought in something that would produce greater mobility of the sputum mass through a lower viscosity and the increase in volume of the latter.

Intestinal Occlusion from Enterospasm.—Apropos of a case in which this diagnosis was made, and in which the course of the affection and effect of sedative remedies used proved the diagnosis correct, H. FOLET (L'Echo Méd. du Nord, Dec. 7, 1902) discusses occlusion from enterospasm in general. As to its pathogenesis, the author finds it quite as natural to believe that a tetanic contraction may occur in the intestine—a hollow muscular tube—as in analogous organs, such as the esophagus and vagina in which esophagismus and vaginismus are generally recognized phenomena. In the evolution of the case described he believes constipation and hysteria to have borne a large part; the irritation or a hardened fecal mass causing the intestine to contract down upon it much as the choledochus and ureter act toward a calculus. As to the treatment, unless the symptoms induced by such occlusion are so grave as to make an operation imperative, he advises sedative remedies. For the relief of pain, local application of ice, and opium by mouth, or morphine hypodermatically should vomit preclude the internal administration of the former; though it is preferred as having a more sedative effect upon the intestinal wall. Violent purgatives augment the spasm, therefore only mild laxatives should be used; preferably castor oil in small repeated doses.

Ankylostomiasis.—This parasitic disease, more properly called uncinariasis, was until lately believed to be a rare disease in the United States. Observation in the Southern States has shown that it is not uncommon among the negroes and poor whites. A very complete report of a case occurring in Chicago is made by J. A. CAPPS (Jour. Am. Med. Assn., Jan. 3, 1903). The patient contracted the disease along the course of the Panama Canal and succumbed about two years later, presenting the picture of a severe pernicious anemia. The infection probably takes place by swallowing the larva in food or drinking water and from dirty hands, but may also take place directly through the skin. The diagnosis is made by examination of the feces and blood, the latter revealing a condition resembling pernicious anemia. The ova found in the feces are characteristic and may be readily hatched out. The occupation of the patient is often suggestive, workers in dirt and clay and those exposed in contaminated localities being especially liable. The administration of thymol in a two-gram dose, repeated in two hours, and followed by a saline, seems to be the most effective method of expelling the worms. This is the first case reported as originating in Panama and its importance is evident, on account of the many workers who will be occupied on the great canal soon to be constructed.

Brinton's Plastic Linitis.—Under the name of plastic linitis Brinton in 1864 described a condition of the stomach which has since been the subject of some controversy, between those who hold it to be of a cancerous nature and those who believe it to be the result

of a simple inflammatory process. Its macroscopical appearance is thus described by Brinton: The stomach is of a grayish-white color, hard to the touch and giving an almost cartilaginous impression. The walls are very much thickened, the various coats being well-defined and not all alike increased in thickness; the increase being greatest in the submucosa, the hypertrophy of the muscular and subserous coats ranking next in degree, and the mucosa being nearest the normal. The affection may involve the whole system or only a part; but the pyloric region is almost always affected. The volume of the organ is most frequently decreased, but it may be of normal size or slightly increased. Histologically the lesion consists in an infiltration of connective and fibrous tissue, with an especial increase of cellular elements in the submucosa, and hypertrophy of the muscular tissue. In four cases seen by A. FOLLI and U. BERNADELLI (Rif. Med., Dec. 4, 5, 6 and 9, 1902) the macroscopical picture presented all the chief characteristics described by Brinton; yet histological examination revealed the neoplastic nature of the affection and diffuse cancerous infiltration was demonstrated in every instance. The authors do not consider the presence of cancerous tissue in these cases, as proof positive of the neoplastic nature of linitis in general, but rather hold that a wider experience is necessary before a decision as to its exact nature can be reached; and suggest the possibility that the condition may be the expression of various diseases, all of which may present the same macroscopical characteristics.

Leucemia and Miliary Tuberculosis.—It is always of the greatest interest to see one disease modified by another and H. QUINCKE (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6) was so fortunate to observe two cases of leucemia and one of pseudoleucemia, which shortly before death developed an acute miliary tuberculosis. Besides the symptoms of the latter disease, there were marked retrograde changes in the blood and in the spleen, the organ diminished much in size and the leucocytes were very much reduced in number, so that broken-down cells were very evident in the blood and this appeared hydremic. It would be interesting to resort to the tuberculin injections for the treatment of leucemia, the author has done this in six cases with some success, but unfortunately arsenic was given at the same time, so that the improvement might have been due to this.

Black-water Fever.—Black-water fever complicated by ankylostomiasis was observed in a patient from the tropics by D. MANN (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6). All the author's observations point to the fact that both severe malaria and the administration of quinine are necessary to bring about hematuria. If quinine was given by mouth or hypodermatically after the patient had a chill, blood always appeared in the urine, if however the attack was not treated or quinine was given during afebrile intervals or after the patient was cured, this was not the case. Since most patients suffering from black-water fever, are also ill with ankylostomiasis, it is possible that the anemia which this parasite sets up, plays an important part in that it reduces the vitality of the red blood cells and thus favors their disintegration.

Leucocytes in Typhoid.—The great value of a leucocyte count for the diagnosis of typhoid fever is again pointed out by A. KÜHN (Münch. med. Woch., Dec. 9, 1902) who lays more importance to the diminution in the number of white cells than he does to the Widal reaction. The symptom, however, is not absolute since it may be found in acute sepsis and occasionally in acute miliary tuberculosis. It probably depends upon a negative chemotaxis exercised by the typhoid bacillus, and ac-

tively chemotactic substances, such as hetol, are capable of inducing a leucocytosis in mild cases of typhoid. In measles the leucocytes are also generally diminished. A leucocyte count is also of value in surgical suppurations, especially in appendicitis. In most cases where the leucocyte count was low and the clinical symptoms of an abscess yet present, an encapsulated serous exudate was found. An acute abscess as a rule gives high figures, yet when it develops slowly and is well encapsulated, an examination of the blood may not aid in the diagnosis. In certain diseases, as in pseudoleucemia, the system may not be able to produce leucocytes and it is possible here that an abscess would not be accompanied by a leucocytosis.

Changes of Blood-pressure in Disease.—A study of the blood-pressure in Basedow's disease, conducted by A. GRÖSS (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 3 and 4), shows that in typical cases the blood-pressure was increased part of the time. Considerable variations in pressure also occurred, their cause was sometimes emotional but more often unknown. The changes in pressure were due both to increased cardiac action and increased arterial tension. The effects of digitalis on pressure were next studied and three groups could be distinguished: (a) The disturbances of compensation progressed and the drug exerted no marked influence on pressure; (b) the blood-pressure was raised with disappearance of symptoms, or (c) there was an incongruity between the blood-pressure and the circulatory disturbance, be it that the latter disappeared without rise or even with fall of pressure or that it progressed with rise of blood-pressure. In uremia, a decided increase in arterial tension was found in all cases.

Influence of Baths on Blood-pressure.—Ordinary baths of from 33° to 35° C. raise the blood-pressure and diminish the frequency of the pulse during the entire time of the bath, according to O. MÜLLER (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 3 and 4), when the temperature is raised up to 40° C. the pressure is first raised, then lowered beyond normal and finally raised a second time. Below 37° C. the pulse-frequency diminishes, above 37° C. it rises. Above 40° C., there is an increased blood-pressure during the entire duration of the bath with increased pulse-rate. With hot baths, the rise in pressure and in body temperature is simultaneous. In the artificial Nauheim baths, the rise in pressure is determined more by the temperature than by the carbon dioxide. Both factors influence the pulse equally. If the pressure falls, the greatest care must be exercised. All baths stimulating perspiration cause, in the healthy, an increase in blood-pressure and pulse-rate. Half and wave-baths increase the blood-pressure. If the patients are active, the pulse-frequency is increased, if they remain quiet, it is reduced. Douches of any temperature, if sufficiently intense, raise the blood-pressure. It is clear that the greatest caution must be exercised in hydrotherapy, where the heart is diseased or the arteries sclerotic.

Tuberculin as a Means of Diagnosis.—Tuberculin has been used very extensively by S. D. MADISON (Am. Med., Dec. 20, 1902), who summarizes his observations as follows: (1) Patients may react to tuberculin, and no evidences of tuberculosis be found at autopsy. Completely healed tuberculosis may react. Cases of proved tuberculosis may not react to the maximum doses. The evidence is not conclusive that other diseases than tuberculosis may react to tuberculin. (1) The margin of error of the tuberculin test is considerable and probably not less than 10 per cent. (2) The maximum dose should be higher than four milligrams, and not more than ten milligrams. Small, increasing doses, are not advisable, as the reaction is not so likely to be distinct on account

of the tolerance which may be produced. An initial dose of three to five milligrams followed by the maximum dose is better. (3) The temperature should usually be normal before injections are given. When the temperature is distinctly above normal, a negative result is of no value, as these patients will frequently not respond at all, even to large doses. (4) It seems quite certain that the glycerin extract of tuberculin deteriorates, and a fresh body should frequently be opened, care being taken to keep it in a cool, dark place. The one-half per cent. carbolic acid solution should be prepared fresh. The deterioration of tuberculin is probably the principal factor in producing delayed reactions. (5) It cannot be said that the injections are entirely without ill results, but their use among suitable patients is no more dangerous than the use of chloroform or ether for diagnostic purposes and is quite as justifiable, as an early diagnosis of tuberculosis is of the greatest importance. (6) About 40 per cent. of all female patients admitted to the hospital react to tuberculin.

HISTOLOGY, PATHOLOGY, AND BACTERIOLOGY.

Effect of Freezing and Thawing on Bacteria.—

Through a series of twelve alternate freezings and thawings, F. TESTI (Rif. Med., Nov. 19, 1902) has determined the resistance of the bacilli of typhoid, diphtheria, glanders, chicken cholera, and the spirillum of cholera, not only to low temperatures but to alternations of temperature. When subjected to such treatment, the bacillus of typhoid and the cholera spirillum evinced a diminished motility; and in colored specimens of the spirillum, changes in the shape were evident. A plasmolytic condition was seen in the bacilli of typhoid, glanders and diphtheria; but microscopical examination of cultures of bacteria so treated, showed that the normal morphological characteristics of each had been restored. Cultural development of all the bacteria occurred after 12 successive freezings and thawings; though that of the bacillus of chicken cholera was noticeably retarded, and of glanders and diphtheria slightly so. Generally speaking, the number of bacilli was but slightly decreased after treatment, save in the case of chicken cholera. After cultural development had taken place, animals were inoculated; with the result that they died within the same time, with the same symptoms, anatomo-pathological affections and bacterial findings as those inoculated with cultures of bacteria which had not been subjected to alternations of temperature; with the sole exception of those inoculated with the cultures of chicken cholera; in whom no evidence of the disease developed.

Value of the Phloridzin Test for Estimating the Functional Capacity of the Kidneys.—Advocates of the phloridzin test claim that as a means of estimating the sufficiency of the renal function it is so delicate and reliable that it may be used as the basis for decision with regard to surgical operations which depend for their success upon the integrity of the renal function. The most conspicuous example of this class of cases is that in which nephrectomy is contemplated, and in which it is necessary to know beforehand the functional capacity of the kidney which is to remain. The test in these cases is applied to urine taken from each kidney separately by ureteral catheterization or by segregation of the urine in the bladder by means of Harris' instrument. The technic of the phloridzin test is described by F. S. WATSON and W. T. BAILEY (Bost. Med. and Surg. Jour., Dec. 4, 1902). It consists of a subcutaneous administration of a sterilized preparation of the drug to which has been added an equal quantity of Na_2CO_3 , the latter holding the phloridzin

in solution. For persons of moderate size and weight the dose of phloridzin is five mg. Half an hour after the injection sugar should appear in the urine if there is normal sufficiency of renal function. Serious disease of the kidney is indicated if no sugar is present; and if the appearance of sugar is delayed or there is only a small quantity present it is taken as an indication of renal insufficiency. It is clearly established that phloridzin is a drug from which glucose is separated in its passage through the body. It is less well proved that the separation of sugar takes place in the epithelial structure of the glomeruli and tubules of the renal cortex and in no other part of the body. Renal function involves two factors: (1) Integrity of the epithelial structure, without which the kidney cannot effect chemical changes in certain substances and deliver them to the urine in the form of waste products; (2) the normal degree of permeability of the membranes which interpose between the blood and the urine in the renal parenchyma. If it is true that the separation of sugar from phloridzin does take place by virtue of the first of these two factors, and if sugar is found in the urine when the test is performed, we must conclude that the second function has been performed properly also. In a series of clinical tests Watson found that the average quantity of sugar eliminated in the first half hour after the administration of the drug in the doses stated, and when the kidneys are normal, is about .45 per cent.; and that the first half-hour's elimination is greater than the second half-hour's by about .06 per cent. When renal disease exists the first half-hour's quantity of sugar eliminated is about one-half as much as that when the kidneys are normal. The effect of ether anesthesia is to stimulate normal kidneys to greater functional activity, but the renal function is not, if judged by the phloridzin test, in any way impaired by the anesthesia. When the kidneys are diseased ether fails to stimulate their function. Taking a series of cases collectively the phloridzin test gives accurate indications of the condition of the renal functions. In a certain number of individual cases, it even appears to be more delicate and discriminating than the ordinary urinary tests, but the relatively large number of cases in which the reverse is true show it to be too variable to be trustworthy, or to induce Watson and Bailey to urge its adoption in preference to the formed methods of urinary analysis for estimating the functional capacity of the kidneys.

Excretion of Nitrogen in Pneumonia.—It is found by H. W. COOK (Bull. J. Hop. Hosp., Dec., 1902) that in cases of pneumonia a surplus amount of nitrogen must be excreted during the days of resolution that will correspond at the least to the original quantity of exudate poured into the involved lung. In most cases there is more, the rest representing in great part a continuation of the formation and an absorption of inflammatory exudate, plus other tissue destruction. In cases of marked delay in resolution, the continued high nitrogen output indicates a continuation of the local inflammatory process, so that in those cases of several months' persistence, we might speak of a chronic pneumonia. In cases of rapid resolution the leucocytosis curve follows the curve of nitrogen excretion with a very striking parallelism, and would seem to point to a causal relation between leucocytes and resolution.

Gas Evolved in the Decomposition of Hydrogen Peroxide by Pus.—It is well-known that when hydrogen dioxide is brought in contact with blood or pus, a lively effervescence due to the evolution of gas results. By experimenting with the pus obtained from abscesses produced by the injection of diphtheria toxins into the tissues of horses, J. MARSHALL

(Univ. of Pa. Med. Bull., Dec., 1902) could prove that this gas consists wholly of oxygen. The author then attempted to confirm Chanoz's statement, that the decomposition of hydrogen dioxide by blood is due to the fibrin and corpuscles of the blood. Horses' blood was defibrinated by whipping, the fibrin removed and the liquid placed in a cool place to allow the corpuscles to settle. A portion of the clear, supernatant serum caused a lively effervescence, while the washed corpuscles did not show any evolution of gas even under the microscope. No decomposing action could be demonstrated for fibrin so that the active agent must reside in the serum. By physical means, a decomposition could not be brought about since experiments with powdered carbon and a glass rod introduced into a strong solution, were negative. Egg-albumen, urine, aqueous solution of trypsin, glycerin, tuberculin and filtered saliva, failed to produce an effervescence. Further experiments showed that the constituent in blood which causes the decomposition is globulin and that the bactericidal action of peroxide is not due to its penetrating the bacteria and destroying their vitality.

A Method of Staining Sputum for Bacteriological Examination.—A method of staining sputum which has grown out of a study of several years is described by W. H. SMITH (Bost. Med. and Surg. Jour., Dec. 18, 1902). Solutions needed: Aniline oil gentian violet. IKI solution, iodine 1, potassium iodide 2, water, 300. Saturated aqueous solution of eosin, Loeffler's alkaline methylene blue. Alcohol, 95 per cent., 4 parts; ether, 6 parts. Ninety-five per cent. alcohol; absolute alcohol; xylol. The specimen should be examined as soon as possible after it has been raised, as standing favors the growth of bacteria. No carbohc acid or corrosive sublimate should have been added to the specimen. A thin cover-glass preparation should be made by means of a platinum loop. Fix in the ordinary way by passing through the flame. Cover the fixed preparation with aniline oil gentian violet, holding well above the flame, and allow it to steam. Wash off excess of gentian violet with IKI solution; cover with IKI solution and allow to steam as before. Decolorize as much as possible with 95 per cent. alcohol. Wash a few seconds in alcohol-ether solution. Wash in water. Stain with aqueous eosin solution. Wash off excess of eosin with Loeffler's methylene blue; cover with methylene blue and allow to steam as before. Decolorize slightly with 95 per cent. alcohol; wash in absolute alcohol; follow with xylol; mount in balsam and examine with an oil immersion lens. The appearance of a specimen thus stained is as follows: The protoplasm of leucocytes and other cells takes the eosine stain, as do the red blood cells; the nuclei of cells stain with Loeffler's blue. Eosinophiles appear as in stained blood preparations. Gram staining organisms appear black or deep violet, while gram-decolorizing bacteria take the Loeffler's blue stain. Capsules about organisms are stained by the eosine as are cilia. Smith describes the appearance of sputum in pneumococcus infection of the respiratory tract, as well as the findings in cases of influenza. The influenza bacillus may appear as a secondary invader in pneumococcus pneumonia or in early or late phthisis; it may be present and persist for years in chronic bronchitis. Influenza bacilli appear in the stained specimen as minute bacilli taking the Loeffler's blue stain (therefore gram-decolorizing), frequently crowding the protoplasm of the leucocytes or lying outside the cells, in large numbers. They vary greatly in number from day to day; a single negative examination is not sufficient. Streptococci may be present in the saliva in small numbers in health. In the sputum they exist frequently as secondary invaders, in association

with the pneumococcus or with influenza bacillus. They, as well as staphylococci, may be present in large numbers in broncho-pneumonia or pulmonary abscess. An organism rarely found in sputum is *Bacillus mucosus capsulatus*. Occasionally pseudo-pneumococcus is found in pneumonia or acute bronchitis; the cocci resemble closely streptococcus and at times pneumococcus. In the routine examination of sputum several specimens should first be stained by the usual methods and examined for tubercle bacilli. If no tubercle bacilli are found another specimen should be stained as above described. Finally, for the proper identification of organisms in sputum, isolation may be necessary. Smith illustrates the clinical value of sputum examination by citing a series of cases.

The Hanging-drop Method.—The employment of this method in the study of hemoprecipitins is of great advantage, especially for medico-legal purposes. A. ROBIN (Phil. Med. Jour., Dec. 20, 1902) in the course of experimentation on specific antiserum for the detection of human blood, found that a marked deterioration in specificity had taken place after four weeks,—the reaction which had been noted within thirty minutes now took over two hours. It then occurred to the author to apply the hanging-drop method in the hope of observing the reaction at a stage when it could not be appreciated microscopically. Accordingly, well-diluted human and calf's blood was examined in a hanging drop and found clear. A loopful of antiserum was added to each, and the slide placed in an incubator. Frequent microscopical observations showed at the end of ten minutes a number of refractive granules in the drop of human blood, which became more marked five minutes later, resembling the Widal reaction, except for the bacilli. The control drop of calf's blood remained clear. The advantages of the method are its shorter duration, greater accuracy under the microscope and necessity of only minute quantities of blood. The agglutination phenomenon seems to show that the antiserum contains beside the specific precipitins, also agglutinins, which act on the granules of the precipitate as they do on bacteria.

Condition of the Pancreas in Cirrhosis of the Liver.—A study of the anatomical structure of the pancreas in twelve cases of hepatic cirrhosis, conducted by F. STEINHAUS (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6), showed an inflammatory proliferation of the interstitial tissue, very similar to the process in the liver itself in all but one case of Laennec's cirrhosis. The changes were in part perilobular, in part also periacinous, with considerable destruction of gland tissue. Besides this there was a small-celled, lymphocytic infiltration with new formation of capillaries and excretory ducts. The cells of Langerhans suffered no change. The diminished tolerance which patients suffering from cirrhosis of the liver show for sugar is probably due to these changes in the pancreas, just as genuine diabetes in cirrhosis of the liver, with or without hemochromatosis, is dependent upon changes in this organ, where diabetes is absent, it is probable that sufficient functioning pancreatic tissue is still present.

Changes in the Blood After Venesection.—After a sufficiently large amount of blood is drawn from the veins, H. v. HOESSLIN (Deutsch. Arch. f. klin. Med., Vol. 74, Nos. 5 and 6) finds that the freezing point of the blood at first is higher, but soon reaches the normal and is lower if the venesections are repeated. The changes in the amount of albumin are not proportionate to the variations of the freezing-point, since there is a constant fall. This stands in relation with the amount of hemoglobin and the number of red cells, which also diminish gradually. The peculiar behavior of the osmo-

tic pressure and the percentage of albumin is probably to be explained by a diffusion of fluids rich in salts and poor in albumin, from the tissues, when a certain amount of blood is taken from the vessels.

Pathology of the Tissue Changes Induced by X-rays.—The therapeutic efficacy of the X-ray has been demonstrated in hundreds of cases, but few examinations have been made of the changes which take place in the tissues. A. G. ELLIS (Proc. of Path. Soc. of Phil., Dec., 1902) has studied four cases of malignant tumor, which were subsequently removed by operation, with the following results: There was found (1) necrosis of cell and trabeculae of varying degree; (2) increase of elastic tissue; (3) fewer areas of lymphocytic infiltration; (4) a tendency to occlusion of vessels by deposits on their inner surface; (5) practically entire absence of infiltration of polynuclear leucocytes. Conclusions are hardly warranted by these results, especially as further studies are made with reference to nerve changes. A few thoughts, however, suggest themselves: (1) Some lay great stress on the blood-vessel changes as a cause of necrosis. While endarteritis is probably induced by the X-ray, the accompanying tissue necrosis seems out of proportion to the vessel-changes, suggesting the possibility of these being *pari passu* results of the same influence instead of cause and effect. (2) The pressure of immense numbers of cocci and bacilli in one case after a twenty-minutes' exposure would argue against any bactericidal effect. (3) The unsatisfactory clinical results as well as the slight microscopical changes of another case can be safely attributed to the presence of a large number of pearls. This emphasizes the necessity of curetting or cutting away diseased tissue before instituting treatment.

THERAPEUTICS.

Arsenic in the Treatment of Tuberculosis.—As the question of the use of arsenic in the treatment of tuberculosis has recently been revived, CYBULSKI (Przegląd lekarski, No. 36, 1902) conducted a series of experiments concerning the effect of hypodermatic injections of arsenic in tuberculous patients at Dr. Brehmer's sanatorium at Görbersdorf. He picked out patients in whom local improvement was as yet possible, and to verify the effect of the remedy on the temperature, febrile cases were selected. The following solution for infection was employed:

Sodii arsen. 0.2
Solut. ac. carb. $\frac{1}{2}$ per cent. 20.0

The initial dose injected was 0.1 of a Pravaz syringe, increased at first daily by 0.1, and then every second day, so that by the end of two weeks a syringeful was injected. Every patient was given about 20 injections. In cases with favorable results, the injections were resumed in two to three weeks in the previous order. The injections are but slightly painful, but care must be taken that the solution be warm. Ecchymoses at the injected spots were rather rare. The author draws the following conclusions as a result of his investigations: (1) The above described method of employing arsenic very often influences favorably the febrile condition, although the effect is rather short in duration; (2) the patients took on some weight; (3) the appetite improved. To effect this, arsenic is given per mouth, as its immediate contact with the mucous membrane of the stomach causes irritation of the same; (4) the patients always felt better in a general way; (5) diarrhea, so common after the use of arsenic, was never seen in any of the cases; (6) the evening sweating was often influenced favorably; (7) albuminuria was never observed; (8) there was no direct effect on cardiac activity. The diminished frequency of the

pulse is to be ascribed to the lowering of the body temperature; (9) arsenic exerts evidently no effect on the pulmonary process.

Treatment of Glycosuria and Diabetes Mellitus with Aspirin.—Aspirin is a salicylate compound which is said to decompose only when it reaches the small intestine. It is also claimed for the drug that it does not produce the toxic symptoms often seen after the exhibition of sodium salicylate. R. T. WILLIAMSON (Brit. Med. Jour., Dec. 27, 1902) gives a further report on its use in over 40 cases of chronic glycosuria and diabetes. Three or four years ago he had used the drug, but in small doses. He has recently, however, come to the conclusion that in order to get effects from it, it is necessary to give the maximum dose. The cases upon which he made his observations were as far as possible chosen for the absence of complications, such as phthisis, nephritis or very advanced cases of diabetes. From a series of carefully tabulated observations he concludes that when aspirin was given the sugar excretion was diminished. When the aspirin was discontinued, it increased. This could be noticed again and again in the same patient, and in the absence of any unusual dietetic limitations, all cases having been put upon ordinary ward diet, there seemed to the author to be but one conclusion possible, viz.: that the drug has a distinct value. It has the most influence in the less severe forms of diabetes and in older people. In the young, unfortunately, it often produces little or no change. So far as the advantages which it has been thought might accrue from the alternate use of aspirin and sodium salicylate in the same case, he believes that the one is as potent as the other in reducing the sugar output, the only advantage of aspirin being that it is tolerated better by some patients than by others.

A Serum to Counteract Morphine Poisoning and Similar Intoxications.—Ehrlich declares categorically that there can be no such thing as an antitoxic serum which will counteract alkaloidal poisons. Faust, however, in endeavoring to discover the meaning of the toleration for large quantities of morphine, which is notoriously acquired by regular users of the drug, showed that while in acute morphine poisoning three-fifths of the quantity ingested can be recovered in the feces, in chronic poisoning only the slightest traces of the alkaloid are eliminated in the fecal discharges. Since practically no morphine is found in the blood or urine, it is obvious that the chronic use of large quantities of morphine results in the introduction of new factors which are capable of destroying and counteracting morphine in the system. L. HIRSCHLAFF (Berl. klin. Woch., Dec. 8, 1900) has undertaken to produce a protective serum to counteract morphine and other alkaloidal poisoning. Dogs were subjected to morphine injections for periods varying from three weeks to five months. Serum recovered from animals so treated was found to possess life-saving power against fatal doses of morphine administered to puppies and mice. Hirschlaff believes that his serum will prove to be of value in acute morphine poisoning in human beings. The dose to be used in such cases cannot be theoretically determined, as the susceptibility of human beings to morphine is absolutely and relatively different from the susceptibility of animals. Reckoned by bodyweight, the human being is 70 times more susceptible to morphine than the puppy and 130 times more susceptible than the mouse. In one case only has the author had an opportunity to test his serum clinically, and the results in this case were most encouraging, but not conclusive inasmuch as the dose of opium taken was not definitely known, nor was the treatment limited to the injection of the antitoxic serum.

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MEDICAL SOCIETY OF THE STATE OF NEW YORK.

THE ninety-seventh annual meeting of the Medical Society of the State of New York was held on Tuesday, Wednesday and Thursday of this week, and an account of the proceedings of its first two days will be found in our columns (page 228). Approaching its centenary (a committee was actually appointed at this meeting to begin preparations for the celebration of the hundredth anniversary of its foundation in 1806), the Society is still vigorous, and its well-attended sessions attest the interest of members not from any one or a few localities, but from all over the State. The committee of arrangements had amply fulfilled its duty in the interesting program provided, and this must be set down as one of the most successful meetings the organization has ever held.

The scientific business included two special features of great practical interest,—a symposium on Hematology and another on Arterio-sclerosis. The papers on Eosinophilia and Degeneration of the Erythrocyte attracted particular attention. The significance of an increase in the number of eosinophiles has been worked out, especially here in America, and the story of it and of its confirmation by others is always new to American physicians. The fact that after so long and dis-

appointing a search that the red-blood cell seems about to yield up the secret of its pathological processes was another point of special interest. When microscopical hematology was begun it was hoped above all that the mysteries of the red cells, their behavior in health and disease, would be elucidated. Instead it was the white cell that proved approachable. At last, however, certain pathological features of the red cell are coming into prominence. Granulo-basophilia, with its relation to lead-poisoning, and still more to the ingestion of iron, is a promising chapter in hematology, whose end it is not easy to foresee.

The symposium on Arterio-sclerosis, while necessarily indefinite from the state of the subject, shows very well how much has been learned about affections of arteries in late years. It would be hard to imagine a society of practitioners a few years ago occupying itself for a whole afternoon with the subject of sclerotic degeneration of arteries. Yet on this occasion the feeling was general that though many excellent practical points had been brought out, the subject was by no means exhausted. The relations of arterio-sclerosis to the prognosis of all disease and especially the infectious processes, was dwelt on in a way that shows how much the general practitioner now considers the individual patient and what he brings with him into the disease rather than the disease itself.

Besides the scientific business the most important part of the program was the discussion of the subject of the union of the two medical organizations now existing in New York. The report of the committee will be published in full in our columns next week. It was decided that until the American Medical Association at its next meeting, to be held at New Orleans in May, shall take action on the obligation of the code of medical ethics as formally formulated, the Medical Society of New York must wait, since it is for this matter that separation originally took place. Furthermore, the Medical Society feels that its ninety-seven years of uninterrupted activity makes it incumbent upon it not to sever its connection with an historic past, especially as there are good legal opinions that the Medical Society can accomplish all its purposes under its present charter. The committee is continued with power, having only reported progress, and the outcome must be left to the meeting of the National Association and its formal declaration as to the uncertain question of the code. While the Society thoroughly approved of the action of its commit-

tee, it was easy to see that the sentiment of the members is for union as soon as possible consonant with dignity and a proper conservatism. This sentiment was well voiced in the President's address, most of which was given up to pointing out the benefits that would flow from a thoroughly united medical profession in this State and country.

THE USEFULNESS OF CONSCIOUSNESS.

THE presidential address delivered by Professor C. S. Minot before the American Association for the Advancement of Science at its last meeting more than merits the acquaintance of medical scientists and especially of physiologists and biologists generally. The address dealt with the biological relations of consciousness. For vigor and simplicity of statement of a complex problem it has seldom been excelled, while its solution of the problem, though by no means new, can scarce fail to be satisfactory to most of those who, having understanding, do not refuse to use it.

Two general topics were discussed in this timely paper, the philosophical basis of common sense dualism as opposed, successfully, thinks Minot, to monism, and, second, the bionomical or ecological relations of consciousness. It is only with the latter aspect of the address that we are here concerned. Despite the virtual materialism of many biologists as scientists, consciousness has usefulness in the biological and evolving scheme of things, as Minot well makes out. It is at any rate gratifying to have so competent a biologist so vigorously proclaim the gospel from so high a place, and with such deep real learning and good sense.

The burden of this doctrine is that consciousness is a true cause which directly influences, in all animal life, the physiological process. It is emphatically not then an epiphenomenon, not at all an unessential and, as it were, chance, property of the brain "no more requiring explanation than the aquosity of water," but rather a greatly important concomitant of all physiological events. In a concise formula the function of consciousness is deemed to be "to dislocate in time the reactions from sensations," that is to exercise a selective control as to the time when a reaction shall occur from any stimulus. Thus consciousness may (1) stop a reaction or (2) evoke one from a remembered sensation, its stimulus, and combine it with sensations received at other times. It does this for the purpose of the better adapting the psychophysical organism to its in-

vironment, thus making it all the better servant of the personality it serves. Thus consciousness is an eminently teleological somewhat, for while without it reaction might follow stimulation directly in a more or less mechanical way and so the animal body carry out its purposes solely by physical law, still the interpolation of consciousness between stimulus and reaction makes possible a much higher order of adjustment—the sort of useful adjustment in fact which would lead to constant improvement, in short to evolution. Evolution, the unswerving purpose of the universe, is the consequence of this finer adjustment which is only possible through consciousness.

Indeed the supremely dominant agency in evolution is consciousness, and without it in animals from monad to man evolution had been unaccomplished. Consciousness was developed for this end, and in man it serves its purpose with vastly increased speed and vigor.

Consciousness ought to be regarded as a biological phenomenon, which the biologist has to investigate in order to increase the number of verifiable data concerning it. In that way, rather than by speculative thought, is the problem of consciousness to be solved, and it is precisely because biologists are beginning to study consciousness that it is becoming the newest problem of science. "The thought which I wish to emphasize," says Minot, "is the importance for the future investigation of consciousness of separating the study of what it does from the study of what it is. The latter study is recondite, metaphysical, and carries us far beyond the limits of verifiable human knowledge. The former study is open to us and opens opportunities to science, but it has hitherto been almost completely neglected. Biology has now to redeem itself by effectual researches on consciousness. On the adequate prosecution of such researches we base great hopes."

This opinion certainly is in the very vanguard of the advancing spirit of the times. Too long already has a one-sided somatism dominated the biology of modern science: for life is fire as well as clay, and fire which burns its reality and its preeminent meaning into the universe.

A HOSPITAL FOR NERVOUS DISEASES.

At varying intervals complaints are made that New York has too many hospitals. A careful survey must however convince the most sceptical that this is not the case. In point of fact, it

stands in need of many more, particularly special hospitals, and in this respect the absence of a neurological hospital is most in evidence, as Dr. Clark points out in the current number of the News.

The inadequacy of the dispensary diagnosis and treatment is well known. The differential diagnosis of nervous diseases in which two or more systems and tracts of the cord are involved and whose anatomical integrity and definite function are still obscure is difficult in the extreme. While our knowledge of cerebral localization is quite sufficient for diagnosis of the strictly motor areas, involvement of other areas does not permit of accurate diagnosis. Indeed, it is next to impossible if not aided by prolonged trained and skilled observation. Nor, indeed, is this all, our future progress in neurological therapeutics must be very slow if careful record cannot be made of all rules of treatment carried out under definite conditions in hospital wards.

The rôle which autotoxis plays in modern neurological medicine suggests the thorough employment of physiological therapeutics, hydropathy, dietetics, massage and systematic exercises which can only be successfully inaugurated in a neurological hospital properly equipped. Neurological and psychiatric teaching, and especially the latter, is still very defective in this country and must remain largely so until adequate means are provided for detailed bedside instruction to medical students. Wards of this character would afford excellent teaching facilities and also opportunities for practical researches along all neurological lines. Surely the city hospital authorities should make early and ample provision in special wards or hospitals for the rapidly increasing diseases of the nervous system.

REPORT OF TRUSTEES OF BELLEVUE AND ALLIED HOSPITALS.

A YOUNG Dutch surgeon who had come from the old Amsterdam to the new exclaimed, not long ago, "We old Dutchmen have to come to New Amsterdam to see *real old* hospitals!" What intelligent defense could his guide make to the merry gibes of the visitor as he pointed with visible glee at the too-familiar deficiencies of our archaic almshouse hospital and congratulated himself that the old world knew none such. True, it might have been whispered to him that, had he wished to see true barbarism in hospital administration he should have been here in the good old days of sixty years ago. Bellevue was

crowded with typhus cases. One night in the dead of winter a frightful blizzard broke over the city. In the gray of the morning, so soon as he could force a path to the hospital and full of foreboding the great Dr. Metcalf climbed the creaking stairs to the attic ward. What horrid sight greeted his eyes! Where ten patients had lain the day before, now in seven beds he beheld seven corpses, three lying naked on the floor. In the remaining three lay snoring the workhouse nurses reeking drunk from the whisky which Metcalf had prescribed the night before! Through the ill-stopped roof the fleecy snow still poured, sifting in great drifts over the floor and mantling in their very beds the cold, frozen faces of the dead. That truly was a different and a sadder Bellevue than even the hospital of our day!

It is a sincere pleasure to every citizen who has at heart the welfare of the masses and who has justifiable pride in the great buildings dedicated by private funds to altruism to know that, barring politics, he will soon no longer be ashamed of the kindred city institutions. The report of the President of the Board of Trustees for the three months ending Sept. 30, 1902, is as full of interest as of promise.

Much of this report is concerned with detailing the advances which have been made at Bellevue, at Gouverneur, at Harlem and Fordham, in the administration of the institution *menage*. All these efforts are most praiseworthy.

There is evidenced throughout the report a desire on the part of the Trustees to recognize the House Staff. These young men have previously been shamefully neglected.

There are two very important regulations cited, the effect of which will be noted with interest by all. The first, bearing on the transfer of patients from hospital to hospital *only* with suitable and full history, is a reform which, it is to be hoped, has come to stay. Outrageous accidents due to lack of proper information have in the past caused many deaths. Of the second, one can but feel that its wisdom has yet to be proved. It puts the interne of experience on the tail-board of the ambulance and in the admitting room; the man of least experience taking his place in the ward and at operations. What success will attend this move remains to be seen.

The report further shows that the Trustees appreciate the greater ability of women over men in the nursing department and the encroachment of the female nursing staff on the male seems

to augur a general transplantation, such as has been so happily accomplished at the City Hospital.

The positions of Examiners of Lunacy have been abolished: an additional resident alienist has been engaged from the State Hospital, so that great improvement is to be looked for in this department. Incidentally this has effected a saving of \$400. It is gratifying to know that after so many years the city is coming to its own and that the building within the yard, so long subverted to a private organization is to be used for the housing of the women employes of the hospital.

Altogether, there is much praise and little adverse criticism to be given to this progressive report.

ECHOES AND NEWS.

NEW YORK.

New York State Medical Society.—The following officers were elected for 1903: President, A. T. Bristow, of Brooklyn; Vice-President, A. B. Angell, of Rochester; Secretary, F. C. Curtis, of Albany; Treasurer, O. D. Ball, of Albany.

Department of Health Notice.—The Board of Health desires to call the attention of physicians to the following resolutions which have been recently adopted: That all public institutions, hospitals, homes, asylums, etc., be required to report all cases of malarial fever which come under their observation, giving the name, age, sex, occupation and present address of the patient, and also information as to whether the attack is a primary infection or relapse, and the address where the disease was probably contracted. That all physicians in the City of New York be requested to furnish similar information in regard to patients suffering from malarial fever under their care. That all physicians be required to report all cases of acute and chronic ophthalmia (trachoma) and pertussis (whooping cough) and to furnish such information regarding them as is required in other forms of contagious disease.

Appointment of Dr. LaFetra.—Dr. L. E. LaFetra has been appointed Chief of Clinic to the Department of Diseases of Children, Vanderbilt Clinic, Columbia University.

Manhattan Dermatological Society.—Regular monthly meeting held on Friday, Jan. 2, 1903. Dr. I. P. Oberndorfer with Dr. Ludwig Weiss presiding. Dr. W. S. Gottheil presented a woman who shows patches of redness, scratch marks, weeping, induration and lichenization, confined to the nates and gluteal regions, on the lower limbs under the breasts and at nape of neck. Process extended over a period of eight years and in spite of all methods of treatment never got well; itching is a prominent symptom; patches vary in size from four inches square to one foot and larger in diameter. Condition had been diagnosed by previous observer as a pityriasis rubra; Dr. Gottheil calls it a chronic indurated eczema. Dr. Abrahams would call it a parasitic eczema, owing to its circumscribed appearance; he recommended 50-per-cent. solution of nitrate of silver locally and followed by soothing applications. Dr.

Bleiman and Oberndorfer believe the eruption dependent upon some constitutional diathesis probably gouty, and advise treatment of that condition primarily and locally, to allay subjective symptoms. Dr. Geyser believed the X-ray would influence symptoms. Dr. Sobel advised internal medication and locally formalin diluted one-quarter in preference to silver. Dr. Pisko thinks gout the underlying factor; nitrate of silver in milder strengths; he spoke highly of Burrows' solution; gouty eczemas were always obstinate to treatment. Dr. L. Weiss also recommended soothing applications; also mys. diachylon to induce softening of indurated patches. Internally phosphate of soda. He also stated that the process as shown suggested to him a condition termed lichen cornea.

Dr. Geyser showed a child of eight years, to illustrate the early age at which the eruption of psoriasis may be observed in children; in this case eruption first observed at age of five years. Dr. Pisko saw a case at the age of three years and Dr. Abrahams one at six months.

Dr. I. P. Oberndorfer presented a male of thirty years. A hard mass in body of penis just behind the glans, about $2\frac{1}{2}$ inches square; although hard to the touch, a feeling of fluctuation was apparent; a few fistulous openings along under surface of penis, and discharging sero-mucus and pus were seen; a similar discharge per urethra; since establishment of discharge, mass somewhat reduced in size. Patient gives no history of gonorrhea or syphilis. Dr. Oberndorfer regards the case as multiple. *gumma of corpora cavernosa*. Dr. L. Weiss agrees with the diagnosis but called attention to the possibility of it being sarcoma. Dr. Kinch observing inguinal and cervical adenitis also alopecia, believes it to be syphilis. Dr. Gottheil agrees with Dr. Oberndorfer; absence of history not to be relied upon. Drs. Pisko and Abrahams recommend thorough antispasmodic treatment as a diagnostic measure.

Dr. W. S. Gottheil presents a woman with a patch, pinkish red in appearance at nape of neck; there is some thickening of skin but no scaling; of two years' duration and never changed in appearance during this time. This patch Dr. Gottheil calls chronic psoriasis. Drs. Pisko and Weiss also regard it as a psoriasis; Dr. Abrahams as seborrheal eczema.

Dr. R. Abrahams shows his case of diffuse scleroderma presented at October meeting. Patient on thyroid; began with gr. i. t.i.d. and increased to gr. v. t.i.d. with $\frac{1}{100}$ gr. strychnine to counteract cardiac depression. Result shows improvement.

Dr. J. Sobel also presents for the second time his case of tuberculous epididymitis and orchitis; since last observed (October meeting) the swelling has increased in size until fistulous openings in scrotum were established; discharge muco-purulent; there is difficulty in urinating and the act is painful; digital examination reveals sensitive and enlarged prostate. Lungs and other internal organs apparently normal. Dr. Sobel believes the condition an ascending tuberculosis beginning in the epididymis; examination of discharge failed to show any tuberc. bacilli.

PHILADELPHIA.

Banquet of College of Physicians.—One of the series of social functions provided for by the S. Weir Mitchell entertainment fund was held January 24 when members of the College of Physicians and distinguished guests from other cities dined at the Hotel Walton. Dr. J. Chalmers Da Costa presided, calling first on Dr. H. C. Wood, the President, who responded to the toast "The College." Several other

speeches were made. Among the guests were Drs. Jacobi and Janeway of New York; Drs. Stiles and Wiley of Washington, and Drs. Cushing, Thayer, and Randolph of Baltimore.

Gift to the Presbyterian Hospital.—A donation of \$30,000, from an unknown donor, to be used for the erection of a new maternity department was received at the recent meeting of the Board of Trustees of the Presbyterian Hospital. The women of the Presbyterian Churches in Philadelphia have started a fund for the endowment of the building.

Temporary Quarters for Phipps Institute.—The property at 238 Pine street has been leased by Dr. Lawrence F. Flick as the temporary quarters of the Phipps Institute for the treatment of tuberculosis. The building is 26 by 125 feet and four stories high. Offices, clinic, and a laboratory will be installed on the first floor and the three upper floors converted into wards. The capacity will be about 50 beds. Two bills to allow the erection of the Institute in the city are now before the Legislature.

The Carnegie Donation to College of Physicians.—Through the efforts of Dr. S. Weir Mitchell, Mr. Andrew Carnegie has signified his willingness to contribute \$50,000 to the Philadelphia College of Physicians so soon as a like amount is raised by the College. Toward this amount \$18,000 have already been subscribed and as no time limit has been placed by Mr. Carnegie, the remainder is assured. The entire fund is to be expended in improving the library which is outgrowing its present accommodations. This means extensive alterations in the present building or even the erection of a new building on another site.

Proposed Amendment to the Law Governing the Practice of Medicine in Pennsylvania.—Physicians in Pennsylvania are asked to write at once to their Representatives and Senators, urging the passage of the bill to regulate the practice of medicine that will soon be introduced. The bill is in the form of an amendment to the present law which it changes as follows: In the sentence reading "No person shall enter upon or continue in the practice of medicine or surgery in the state of Pennsylvania * * * unless he or she shall have complied with provisions of this act, etc.," there is inserted, in the space indicated, this clause, "or enter upon or continue in the treatment of any person sick or afflicted by the use of any medicine or by the use of any other means or agency whatsoever, either for a valuable consideration or without any charge or remuneration therefor." The punishment for violation of the law is changed from "a fine of not more than \$500" to "a fine of not less than \$200 nor more than \$500 for each offense, and undergo an imprisonment of not less than thirty days nor more than six months in the county jail." The same bill also changes the time required in medical colleges from three to four years.

Symposium on Serpent Venom.—The annual symposium of the Pathological Society was held January 22, the subject being "Serpent Venom." The first speaker was Dr. S. Weir Mitchell who gave a brief "History of the Investigation of Snake Venom." Dr. Mitchell stated that no work of importance on the action of venom appeared before the year 1857 though some desultory work along that line had been done before. He himself was the first to take up the subject with any degree of thoroughness and he studied it for a period of three years. That study settled many questions regarding the physiology of venom and its action in a manner that

has held to the present time. The Civil War then interrupted the study. In 1868 he again took up the investigation and found, among other things, that serpent venom was harmless when ingested, that serpents were not able to kill themselves with their venom, and that venom was capable of causing the agglutination of blood corpuscles. Other work then crowded this aside for some years until in 1881 the resumption of the investigation was brought about by a psychological event that Dr. Mitchell has never been able to explain. One evening while waiting at the door of a friend's house he glanced at the door mat which had a frayed edge. One strand had assumed the shape of a coiled serpent. As he saw this there suddenly came to his mind the thought that venom was double instead of being a single substance. He suggested this to Dr. Reichert of the University and five months' work together proved the hypothesis to be correct. The result of that study was really the key to the present knowledge of albuminous poisons. Some of the phenomena of the effect of venom on the blood were also determined. In 1899 further studies regarding the blood changes induced by venom were made. Two years ago, at Dr. Mitchell's suggestion, the work was taken up by Dr. Flexner.

Venene and Anti-Venene.—Dr. Joseph McFarland presented a communication on the above subject, stating that his researches were stimulated by the work of Calmette and other observers. He began by repeating the work of Calmette but found that he was obtaining but slight results from the work due the fact that venom from the serpents of this country exert comparatively little effect upon the nervous system while locally it is exceedingly destructive. Accordingly he determined to study the local action of venoms, using those from the rattlesnake, moccasin and copperhead. He found these very destructive when injected, the first horse used dying from local lesions, these developing at every point of inoculation. He then introduced the poison into the veins of a second horse in order to dilute it before it reached the tissues. Each injection produced immediate collapse, the horse dropping as if shot. After a short time consciousness would be regained. The animal was finally supported by a sling when the injection was made. Increased dosage finally produced a serum that gave doubtful protection against venom. The horse then contracted pneumonia and died. A third horse was kept alive for fourteen months, its serum finally conferring immunity, unmodified rattlesnake venom having been used. Experiments then proved that this serum was protective against the nerve poison in cobra and rattlesnake venom but would not protect against the local effects of rattlesnake venom. At this stage the horse died from the effects of a local lesion caused by accidentally inserting the needle into the sheath instead of the lumen of a vein when injecting venom. The experiments proved too costly to warrant their continuance.

The Effect of Serpent Venom Upon the Blood.—This phase of the question was discussed by Dr. Simon Flexner who stated that the work done by Dr. Noguchi and himself had been due to the suggestion of Dr. Mitchell who had also furnished much of the necessary financial aid to carry on the investigations. The subject has been studied continuously for more than two years, many of the results having been published. The idea had been to attack the subject along the lines of immunity, first determining the changes in the blood produced by venom

and then interpreting them. Very soon the amboceptor or intermediary nature of venom was demonstrated. Then came the fact that the agglutinating principle of venom is independent of the hemolytic principle, the latter probably being the toxic constituent. Efforts were then made to separate the poisons that act on the nervous system. This led to the demonstration that there are a very large number of special poisons in venom, among them being agglutinin, hemolysin, hemotoxin, and, especially in the cobra, what Dr. Flexner has called neurotoxin. The nature of the poison acting on the vessel walls to cause hemorrhage was another subject of investigation. It was found that there is a solution of a part of the vessel wall, the poison dissolving the endothelial cells. This principle has been called hemorrhagin, which is not a good term, a better one being endotheliolysin or solvent of endothelium. Thus there are in venom principles that have an affinity for nerve cells, for blood cells and for endothelial cells. In fact toxins have been found for practically all of the body cells, there being seemingly no limit in this direction. Experiments to determine the exact action of the special principle on nerve cells gave no results in warm blooded animals and the work was transferred to Wood's Holl where shell fish, principally clams, were used. There it was demonstrated that neurotoxin is a cytolytic that causes solution of nerve cells. The nature of venom in destroying the bactericidal action of the blood has furnished the most recent studies, these having shown that the venom amboceptor fixes the complement of the serum. Venom contains many amboceptors. Dr. Flexner concluded by saying that venom has been shown to contain a large number of principles having different physical actions, but it is hardly possible that they all differ chemically.

CHICAGO.

Officers of the Chicago Society of Internal Medicine.—At the annual meeting of the Chicago Society of Internal Medicine, held Jan. 19, the following officers were elected: President, Dr. Geo. W. Webster; Vice-President, Dr. Robert H. Babcock; Secretary, Dr. Charles H. S. Williamson; Treasurer, Dr. M. L. Goodkind.

A Contribution to the Diagnosis and Treatment of the Surgical Diseases of the Ureter and Kidney.—At a meeting of the Chicago Medical Society, held Jan. 21, Dr. F. Kreissl read a paper on this subject. The first case reported by him was one of hematuria, in which he resorted to nephrotomy. The patient was forty-five years of age. In March, 1902, the patient had hematuria, accompanied with tenesmus at times. Rest in bed for several days reduced the quantity of blood materially, so that the urine sometimes seemed to be almost clear. The hematuria, however, returned soon after the patient was up and about a few hours. Examination revealed the left kidney larger and more resistant than the right one. There was no family history of consumption, malignant growth, or of syphilis or a trauma. From the right ureter clear urine was secreted, while bloody urine escaped from the left side. No. 8 ureteral catheter, French scale, was passed without difficulty into the renal pelvis, and bloody urine collected for examination. The same procedure on the right kidney furnished clear urine. Excluding a gumma of the kidney and essential hematuria, there remained as a more common cause tuberculosis, stone, malignant growth, or nephritis. The result of the examination of both urines was given. In the

skiagraph taken the following day a shadow was noticed, the density and position of which might lead one to make a diagnosis of a calculus of the ureter caught at its third narrowing in the bladder wall, but closer study made it evident that the shadow was not a ureteral calculus. The distance of each ureter from the median line was less than one inch. If, in this case, the distinct shadow was a ureteral stone, the author thinks it ought to be about midway between the median line and where it appears on the skiagraph. A second exposure, made four days later, showed the same condition. Inasmuch as he had no difficulty in passing a ureteral catheter up the ureter and obtained bloody urine direct from the renal pelvis, he thought he was justified in eliminating the existence of a stone in the vesical portion of the ureter, or its possible bearing on the hematuria. To ascertain the cause of the hematuria, he made a lumbar incision Oct. 15, and found a very large, congested, cyanotic kidney, but macroscopically nothing pathological on its surface, nor on the cut surface of the parenchyma, in the calices, or the renal pelvis. A good-sized elastic bougie was easily passed down the ureter into the bladder, without encountering an obstruction. The urine was closely inspected for three weeks following the operation, but no concrement found, neither could a stone be seen on subsequent cystoscopic inspection of the bladder cavity. Patient has gained in weight since he left the hospital. The urine cleared up during the second week after the nephrotomy, and has remained free from albumin and blood.

Ureteral Calculus.—The second case was interesting on account of the unusual size of the ureteral calculus. The ureteral obstruction was caused by a calculus whose diameters were $1\frac{1}{2}$ by $\frac{7}{8}$ inches. This case showed to what extent the ureter may be distended by a calculus, and yet urine escaped alongside the partial obstruction, as the author could see through the cystoscope distinct jets of urine emitted at frequent intervals. The peculiar location of the stone in this case renders operation rather difficult. The author states that the perineal route for such cases is not considered a favorable one, and the extraperitoneal route does not give much space to work deep in the pelvis. The transperitoneal method is not without danger, on account of a possible infection. When the patient makes up his mind to undergo an operation, the author proposes, after removing the stone, to pass a ureteral catheter a demeure through the bladder into the renal pelvis, then close, as far as the thin and disintegrated walls will permit, the ureter by Lembert sutures, unite the parietal peritoneum over it, leave a drain in the cavity for quite a while, draining all the urine from this side until the wound in the peritoneum is firmly closed.

Renal Tuberculosis.—The third case was one of renal tuberculosis in a man, forty years of age, who gave a history of repeated attacks of gonorrhea within the past fifteen years. A bacteriological examination of the urine and cultures corroborated the diagnosis. It was impossible to trace positively the source of the infection with tubercle bacilli. Considering the suspicious condition of the right kidney, the author thinks nephrectomy in this case is out of the question. Regarding the treatment employed, after emptying the renal pelvis and irrigating with an oxycyanide of mercury solution through the ureteral catheter, he injected gomenol, and while withdrawing the catheter he deposited some of it in the ureter and bladder. Besides these applications, he

injected the oil hypodermatically, after noticing a marked decrease in the number of tubercle bacilli within two weeks. Under this treatment the patient's condition has improved considerably. While the author thinks it would be premature to draw definite conclusions from the few cases in which he has employed gomenol, and without considering it to be a specific for tuberculosis of the urinary tract, he nevertheless believes that it is a remedy capable of effecting good results in bacterial infections of this tract.

A Contribution to the Surgery of the Ureter, with Report of a Case.—Dr. Wm. Cuthbertson read a paper with this title. He stated that ureteral injuries occurred in spite of the most painstaking care on the part of the operator, and its possibility is one of the gravest objections to operating by the vaginal route. In abdominal operations, however, the surgeon can, in the large majority of instances, see what structures he is handling, and even if the ureter is displaced by a new growth, inflammatory products, or is abnormal in its course, it can be recognized and avoided. In vaginal operations the position of the ureters must be taken for granted, unless they have been previously catheterized, and the catheter left in situ, and the operator proceeds, trusting that they may not be injured.

The patient, a woman twenty-six years of age, was admitted to his service at St. Luke's Hospital, July 1, 1902, with a discharge of urine from the vagina. She had had a vaginal hysterectomy and double salpingectomy performed on May 9 previously. As there was a question as to whether she had a vesicovaginal or a uretero-vaginal fistula, he injected a solution of methylene blue into the bladder and closely watched the fistula to see if any of the solution passed through. As the urine in the vagina remained perfectly clear, vesico-vaginal fistula was excluded. Dr. Kreissl then passed a ureteral catheter. He found it impossible to pass a catheter into the left ureter beyond three-quarters of an inch, while on the right side, a catheter could be inserted up to the kidney. From these results a diagnosis was made of injury to the left ureter. On July 17 Dr. Cuthbertson operated on the patient, assisted by Drs. Kreissl and Watkins, for the purpose of implanting the ureter into the bladder, this procedure being planned on account of the impossibility of passing a catheter beyond the ureteral opening, which indicated that the ureteral injury was near the bladder.

The results of the operation proved (1) the efficiency of silk sutures in holding a shortened ureter in the bladder opening, thus doing away with severing the anterior bladder attachments in certain selected cases; (2) safety and advisability of leaving a ureteral catheter in situ in the operation of ureteral cystostomy.

Streptococcus and Staphylococcus Bronchitis.—At a meeting of the Chicago Society of Internal Medicine, held Jan. 19, Dr. Joseph M. Patton read a paper on this subject. After referring to the unsatisfactory nature of classifications heretofore employed, because of the growing recognition of the importance of micro-organisms as etiological factors in bronchitis, and because of more or less well-defined types of bronchitis resulting from infection by certain organisms. Three case histories, taken from a number of cases, were given by the author to illustrate and support the occurrence of a form of bronchitis due to infection by streptococci or staphylococci, or both, and probably primary, which exhibit more or less characteristic features, and in some cases simu-

late the early clinical history of tubercular infections.

These cases did not present a history of a primary influenza, but exhibited marked physical signs of local or general bronchitis, with continuous temperature, persistent cough, occasional night sweats, loss of expansion, and in some, modifications of pitch, which might be suggestive. The sputum showed streptococci and staphylococci. In one of the cases cited staphylococci alone were present. No influenza bacilli were present. These cases completely recovered in a few weeks. The subjective symptoms of these cases are, of course, not sufficient for diagnosis. The physical signs may be only suggestive, especially in cases of staphylococcus infection, with lack of sudden onset, a tendency to localization, and the subacute character of the subjective signs, which much resemble the onset of tuberculosis, involving the terminal bronchial tract, the principal difference being the infrequency of apical localization. The two infections, streptococcus and staphylococcus, in their relation as causes for bronchitis, their effects relatively appear to bear much the same relation to each other as do those of pure and mixed tubercular infection in their earlier manifestations. With no intention to discuss the treatment of these forms of bronchitis at this time, he would merely call attention to the unsatisfactory results for the usual sedative or stimulating expectorant treatment, and remark that the best results came from alternative medication, and the use of soothing and stimulating local medication by deep inhalation.

Cockroaches as Conveyers of Typhoid Infection.—

Dr. Rosa Engelmann read a paper on this subject. She gave the history of a house epidemic of typhoid fever, which, in the opinion of Dr. Edward F. Wells and herself was spread by cockroaches. She could find no other record of such conveyance in the literature. Flies, mosquitoes, fleas, bedbugs, and cockroaches belong to the same large family and order of insects. All but the cockroach have been demonstrated to be not alone the active or intermediary hosts, but also accidental carriers of various diseases, including typhoid fever and its allied disorder, bubonic plague. In Oct., 1902, on the complaint of Dr. Wells, the essayist was instructed by the Health Department to investigate a house epidemic of typhoid fever which in five months had claimed as many victims in one large, eight flat, well-constructed apartment building. A similar neighboring building, furnished in common with an artesian well water supply, general and janitor service, was and had been free for two years of any sickness. Another peculiarity was the fact that the typhoid cases, with one exception, were confined to the south tier of apartments and occurred in four families. Case I, a severe one, occurred in June. A delicate woman, depressed by sorrow, living in the first lower south flat, succumbed. Hydrox water and Consumers' ice were in use, but raw fruits and vegetables were cleansed in faucet water which was likewise in use for mouth, toilet and bathing purposes. Milk was supplied by the Borden Company. Two nurses and a competent physician were in charge with a consequent attempt at proper disinfection of the discharges. Case II appeared in July in the north lower flat, opposite the first case. A growing lad was the patient. No information as to the domestic life was obtainable, since at the time of her visit the family had moved; hence the excrement of this case may have infected the catch basins. Case III came down with the disease in the south flat, third floor,

the first week in August. A child under two years of age was affected and previous to this time had been healthy. It, with its mother, had just returned from a six weeks' sojourn at a Rhode Island sea coast town, which for years had been free from typhoid fever. There was also careless washing of vegetables, etc. Case IV, the mother of the above babe, took sick the first week in October. A good physician and trained nurse were in charge of both cases. Case V, in south flat, fourth floor, was reported by Dr. Wells, Oct. 10. Consumers' ice and hydrox water and Borden milk supplied this family. Faucet water was used for toilet and culinary purposes. This case, like numbers I, III and IV, was in the south tier of flats. Why, with one exception, was the north tier exempt? Cases I and II, in lower south and north flats, were convalescing when the family in the third south flat returned to a home that had been closed and uncared for six weeks, and by this time was overrun with cockroaches. The same conditions existed for a like period in the second floor, south flat, directly over the home of the first patient taken sick. Case V, living on the fourth floor, south flat, complained during the summer to the agents and janitor for relief from a perfect pest of cockroaches. They were on the food and in the beds and all over the drawing room, so that this family were having daily and deadly raids upon these unwelcome invaders which not only permanently installed themselves in every room, but came up in additional hordes in the clothes baskets when brought up from the basement. The place was literally alive with cockroaches. Why was this basement overrun with them, while the neighboring basement was exempt? The people were well and every flat occupied in the second apartment building, while in the first one there was sickness in two families, with consequent neglect of housekeeping. The second closed flats above next became ridden with vermin and communicated this condition to the top flat from which the greatest complaint came and in which the last case of typhoid fever appeared. The etiological incident of the first case is uncertain, although it can probably be ascribed to culinary and toilet use of the city water, that at intervals during the spring and early summer had been turned into the house mains by the janitor when his artesian well-pump broke down. He also at monthly intervals turned on the city water into the tank in order to wash it out, for it was less labor to scrub it with city water than to carry up the artesian water from the pump level to a sixty or seventy foot tank elevation. Not only did the artesian well water become contaminated, but the house mains as well. This state of affairs ceased with the employment of a new janitor later in the summer, who notified tenants when the city water was turned into the house mains. If the infection was due in all these cases to the water supply, why was there no further incident of the disease in the other twelve families, and why was it almost confined to the tier directly over the first case. The artesian well water, freshly pumped, and the tank supply were examined twice in October and found to be free from typhoid germs. The pump connections, piping, and drainage were perfect, as were the plumbing and sewage connections. Upon repeated complaints of the tenants during the summer the catch basins were finally cleaned in the fall, but not probably until after the cockroaches had carried sewage, typhoid infected by Case I, or possibly Case II, to the food supplies of the other afflicted families. By October the vermin

were also beginning to be exterminated by the effort of professional exterminators, and no more cases appeared. During this time the adjacent building had been comparatively free from cockroaches.

Death of Dr. Dickerman.—Dr. Edward T. Dickerman, one of the young ear and throat specialists of this city, died Jan. 23 of pneumonia. He was born in Jacksonville, Ill., in 1867. After graduating from the Chicago Medical School in 1890, he was appointed house officer of Mercy Hospital. Later he went to Europe for study, and on his return he was made Professor of Laryngology and Rhinology in the Chicago Policlinic; also instructor in otology in Rush Medical College, surgeon to the Eye and Ear Infirmary and Assistant Aurist to the Presbyterian Hospital.

CANADA.

Annual Lecture of McGill University.—Dr. T. A. Starkey, the newly-appointed Professor of Hygiene at McGill University, delivered the annual university lecture one afternoon last week to a large audience. He took for his subject "Hygiene," and after devoting some time in the introduction thereof to the work of the late Professor, Dr. Wyatt Johnston, both inside and outside of the university, as well as his work in connection with medico-legal matters, he dealt with his subject proper in three stages. He considered that it is among those nations only which have secured to themselves social progress, general enlightenment and constitutional freedom, especially to the great mass, the working classes, that hygienic reform has made any progress worth speaking of. These three things produced two results: (1) An ever-increasing need for better administration to ensure a more wholesome condition of things in the general surroundings; and (2) a more charitable desire on the part of all to promote the welfare and happiness of our fellow-creatures.

McGill Students Decorate the Monument of Queen Victoria.—The idea of the annual decoration of the monument of the late Queen Victoria in Montreal by the students of the different faculties of McGill University, originated among the students of the medical faculty, who some weeks ago came to the conclusion that they would annually deposit a wreath on the monument to Her Late Majesty. On the afternoon, therefore, of the second anniversary of her death, the undergraduates to the number of 1,100 assembled and marched to Victoria square, where separate wreaths of rare and beautiful flowers were deposited on and around the monument. A large concourse of citizens gathered to view the decoration and the attendant ceremonies.

Laval Medical Students Hold Annual Dinner.—The medical students of Laval University, Montreal, held their annual banquet on Jan. 17. There was a large attendance including many prominent and distinguished citizens of Montreal and the province of Quebec. In replying to the toast to "Our Professors," Sir William Hingston emphasized the importance of medical practitioners being ever ready to cope with any emergencies which might arise in the practice of medicine. At times the whole world had its eyes on the medical profession, and instanced the cases of King Edward and the late President of the United States, William McKinley. All should so prepare themselves that they would be an honor to the profession they were about to enter.

Guarding Against the Plague in British Columbia.—Dr. C. J. Fagan, the secretary of the British Columbia Board of Health, has returned to Victoria from San Francisco, where he was investigating re-

ports in regard to the prevalence there of the bubonic plague. He reports to the British Columbian Government that a force of men is employed at San Francisco in collecting rats, and that rats which have been found dead have shown plague bacilli when examined. He recommends that a strict quarantine be maintained against vessels arriving from San Francisco.

Canadian Quarantine Laws.—Representatives of the Montreal steamboat companies waited on the Minister of Agriculture last week at Ottawa with regard to the quarantine laws on the St. Lawrence, stating that their vessels and passengers were subjected to undue detention, far more so than vessels and passengers arriving at the port of New York. The Minister replied that the regulations on the St. Lawrence and at New York were practically identical, but that he would make inquiries into the administration of the quarantine law at New York; and if improvements could be applied without danger to the public health, they would be done.

GENERAL.

Mississippi Valley Blue Book.—The Mississippi Valley Medical Blue Book, published under the auspices of the Mississippi Valley Medical Association by McDonough & Company, of 715 Locust Street, St. Louis, and 79 Dearborn Street, Chicago, is under process of publication for 1903. The book is free to all members of the Association. It will contain the names of the physicians and their graduation date, of Alabama, Arkansas, Iowa, Illinois, Indiana, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Tennessee, Wisconsin.

Appointment of Dr. Stewart.—Prof. G. N. Stewart, M.D., Ph.D., professor of physiology in Western Reserve University Medical School of Cleveland, has been appointed professor and head of the department of physiology, to fill the vacancy caused by the resignation of Dr. Jaques Loeb.

The Title of Doctor.—This title is said to have been first conferred by the University of Boulogne in the twelfth century; and the first Doctor of Medicine was G. Gordinio, who received the degree from the College of Aosta in 1220.

Cause of Napoleon's Death.—According to a statement published in the *Gazette Médicale de Paris*, by Dr. Baudouin, Emperor Napoleon's death was due to perforation of a gastric ulcer, rather than from cancer of the stomach, as has been stated.

Cretinism in France.—The number of cretins and idiots in France is estimated at 125,000; and in the eastern provinces the number reaches 32 in 1,000; while those affected with goiter in the same district are 111 in 1,000.

Anesthesia in China.—General anesthesia is said to have been in use among the Chinese as early as the middle of the tenth century. This they effected by inducing absorption of certain narcotic substances, the base of which was opium, aconite, etc. The subject was awakened by causing him to drink salt and water. The application of general anesthesia was, however, limited, as operations were few.

Wholesale Immunization Against the Plague in India.—The government of Punjab has undertaken to immunize 700,000 inhabitants against the plague. It is hoped to accomplish the work within five months; and the laboratory of Bombay has been asked to provide daily, 50,000 doses of antiplague serum to the physicians of Punjab.

Antimalarial Laws in Italy.—A recent governmental decree requires, under penalty of fine, that every

employer of laborers in malarial districts, which are more than two kilometers from the residence of a physician, shall be provided with sulphate and hydrochlorate of quinine in sufficient amount for distribution to all his employes in the event of their being affected with malaria. Laws have also been passed which fix a maximum price for the drug, and provide for its distribution by the State.

Syphilitic Infection of Wet-Nurses from Infants.—Something more than a year ago, a Lyons court made a decision holding parents responsible in the event of syphilitic infection of a wet-nurse by their offspring. Following this precedent, the Court of Bourges holds the authorities of the Foundling Asylum responsible for like infection unless the infants are kept under observation a sufficient length of time before giving them to wet-nurses, to establish positively the non-existence of congenital syphilis.

A New Western Sanitarium.—Within a short time construction work is to begin at Point Loma on what is planned to be perhaps the largest and handsomest sanitarium building in California. A company recently formed is behind the project, and it is the intention to put up a main building that will cost \$30,000, and later to construct a number of cottage wards for special diseases of all kinds. The most modern methods are to prevail in the plans for the sanitarium, and no expense will be spared in making the accommodations the best that are obtainable. The success of the project is due to the efforts of Dr. J. C. Hearne, who has been an advocate of such a scheme for a long time, and who has the business and professional ability to carry through the plan.

CORRESPONDENCE.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

PECULIAR CASE OF NEPHRITIS—CONCERNING AN EPIDEMIC OF SICKNESS CAUSED BY STREPTOCOCCI—OPERATION WITHOUT DIRECT CONTACT WITH THE WOUND—TREATMENT OF EARLY SEPSIS.

MENZER, at the Society of the Charity Physicians in Berlin, Dec. 11, 1902, described a peculiar case of nephritis. The patient died of purulent peritonitis, the cause of which was a purulent infection of the bronchial lymph glands. In both the kidneys and the spleen numerous streptococci were found. The point at issue in the case is, according to the author that these streptococci which reached the kidneys through the blood-current may well have been the cause of the infection of the kidneys. In precisely the same manner he observed streptococci in the urine of a patient suffering with chronic nephritis, after an intense attack of scarlet fever. The same author also reported a remarkable example of an excretion of streptococci through the urine. The patient was a pregnant woman presenting edema and albuminuria; the child within her was dead. During the delivery of this child she had eclamptic seizures. The streptococci disappeared from the urine at the same time as the albumin.

F. FOERSTER, at the Society of Naturalists and Therapeutists, in Dresden, Oct. 25, 1902, contributed a paper upon an epidemic of sickness caused by streptococci. The epidemic affected seven out of nine individuals in one household, namely, the mother, one very young child, and five older girls, ranging from 5 to 11 years of age. The father and the female cook escaped. It lasted three months, but was followed, after intervals of three and six months respectively, by isolated cases. Altogether there were 18 diseases, of which ten were angina,

one a severe coryza, three affections of the lymphatic glands, and four various skin affections. The various patients suffered in different manners. The streptococci, which were inoculated into white mice, did not appear to be very virulent. The epidemic passed through three stages, separated by short intervals. The onset was chiefly as a skin disease, then some invasion of the mucous membrane following in a regular interval. From the peculiarities of this observation, Foerster offers the following seven conclusions: (1) Streptococci may, in man, quite frequently cause epidemic disease; (2) the most frequent form is angina; (3) in certain circumstances, the streptococcus may be passed directly from person to person; (4) the specific virulence of this germ is acquired, apparently, through direct passage from one person to another, among which the most important seems to be the processes in the skin and the lymphatics; (5) personal predisposition does not thoroughly explain these epidemics. The virulence which the germ possesses toward white mice, unfortunately does not give a very definite estimate of its specific poison toward man; (6) the period of incubation in such epidemic attacks in man appears to vary between three and three and a half days; (7) the high degree of intoxication promises great difficulties in controlling such epidemics.

KOENIG, of the Medical Society of Berlin, Dec. 10, 1902, discussed the subject of operation without direct manual contact with the wounds. The speaker alluded chiefly to the recent advancement of antiseptics and asepsis, which, nevertheless, in the attempt to render the hands free of pus, had encountered almost insurmountable difficulties. For this reason he had endeavored, latterly, to avoid direct contact between the hands and the wounds, so far as possible. At first he adopted this method in operating on joints, which are so easily infected. Then he extended his precautions to operations upon bones, and employed long instruments for this purpose, instead of his hands. With perseverance, after a little experience, this plan succeeds well, even in such difficult operations as replacement of a displaced semi-lunar cartilage within the knee-joint. If the operation is of the class in which direct contact between the hands and the wound is impossible to avoid, for example, those within the cavity of the abdomen, he, nevertheless, carries out the general plan of instrumental work to the very last limits. In appendicitis, for instance, he has been able to do the entire operation with instruments, in cases coming for intervention during the quiescent interval. The value of this procedure, for both the surgeon and the patient is certainly a very great one. In the first place, the subsequent treatment of the patient is apt to be better; and in the second place, there is very much less danger. Out of 1,000 operations, he has done over 600 in this manner, among which 100 were joint and bone operations. In not one of these 600 cases did he find the least possible disturbance after the operation. He commends most strongly this method of treatment to the practitioner of medicine, whose surgery so often involves treatment of the extremities—that is bone and joint conditions.

BERTELSMAN, at the Society of Physicians in Berlin, Dec. 2, 1902, read a paper on the early stages of sepsis, with special reference to the bacteriological examination of the blood. This author discussed the same subject at the recent Congress of German Surgeons, and more lately, again, in Langenbeck's *Archives of Surgery*. His observations brought forward in this present paper concern all of the various forms of pyogenic infection which, during the past year, had appeared in St. George's Hospital on the surgical side. Of 220 cases altogether, 154 were accepted as being applicable to observation. Of this number, 48 gave a positive condition

of the blood. This is a circumstance which the author regards as rather common, not only in true sepsis, as the term is generally accepted, but also in the general pyogenic processes, as usually seen. For instance, in the series of ordinary phlegmonous processes, he was able to discover quantities of streptococci in the blood. In a few instances, many hundreds of colonies were obtained. An interesting fact in this connection is that after the pus was evacuated with a knife, the germs soon disappeared from the blood. Of the 48 patients who gave positive findings in the blood, 20 died. This small mortality the author ascribes to the fact that he was obliged to examine the patients chiefly in the initiatory stage of infection, before really any true sepsis in the clinical sense of the term was present. His summary is that he found in the blood streptococci 28 times, with 9 deaths, or 32 per cent. mortality; staphylococci in 13 persons, with 9 deaths, or 70 per cent. mortality; *Staphylococcus albus* in two individuals, with no deaths; pneumococci in one fatal case; *Bacillus coli communis* in one recovered case; bacillus of syphilitic fever in one favorable case; a mixed infection with urethral fever in two individuals, both of whom died, one by accident and the other in virtue of the infection. The observer concludes from these facts that streptococcal infection may, on the whole, be regarded as better in prognosis than staphylococcal. He acknowledges that herein there is a divergency of opinion from most observations by bacteriologists. From the fact that the germs disappear so promptly, as a rule, from the blood, just as soon as the original focus is evacuated, he concludes that probably the living blood should not be regarded as a good culture-medium for these germs. He offers this, however, as probably an entirely new observation. If one notices the bactericidal power of the blood, he must then admit that in every well-established case of sepsis, using the word in its pure clinical sense, the patient is face to face with a focus all over his body, because the bacteria do not, in fact, breed well in the flowing blood. This theory, however, will necessitate considerable more research. If his findings are correct, there is practically no connection whatever between pyemia and septicemia, as these terms are used clinically. Thrombo-embolic pyemia has been, since the days of the advent of asepsis, more and more rare. While in twenty individuals who died of pyogenic infection, pus was found in the blood before death, it was impossible to find it in 14 victims of peritonitis before death, even in protracted examples of the disease. These patients dying from peritonitis received their disease from unknown sources. He therefore concludes that such cases belong to true toxemia.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.
Ninety-seventh Annual Meeting, held at Albany, January 27, 28 and 29, 1903.

FIRST DAY—JANUARY 27TH.

AFTER the President's inaugural address and the reports of Committees of Arrangements, By-Laws and Hygiene, the Committee on Ethics recommended the dropping of two members (Lewis Co.) for unethical conduct. On motion of Dr. D. B. St. John Roosa, the committee on publication was instructed to furnish copies of the transactions of the Society to all regular delegates to the annual meeting. The State Board of Medical Examiners reported that 500 candidates had successfully taken the examination of the regular board of examiners. The proportion of rejections was nearly

18 per cent. Most rejections occurred in pathology and diagnosis. There are in attendance at the medical colleges of this State 248 more students than last year, and about 50 more post-graduate students. The question of making medical examinations of old practitioners from other States somewhat less technical and more practical, so as to facilitate the examination, is under consideration, though at present not legally allowed. The question of bedside examinations is also under consideration. At present the serious difficulty is the revelation of identity of candidates which it involves.

The Committee on Relations of the Medical Society of the State of New York to the National Profession, then reported progress, its report was accepted and the committee continued until after the action of the American Medical Association with regard to the Code of Ethics at its next meeting in May at New Orleans can be learned.

Special Cortical Center for Writing.—The scientific business of the meeting began with the reading of a paper by Dr. Herman C. Gordinier, of Troy, in which he presented arguments for the existence of a separate cortical center for writing. He said that motor aphasia and agraphia do not necessarily occur together. The destruction of Broca's speech center at the posterior part of the third frontal convolution does not necessarily produce loss of power to write. Besides cases of isolated motor agraphia have occurred in which the lesion has been limited to the base of the second frontal convolution, and it is in this part of the brain that the writing center appears to be situated. The power to write is independent of the power to move the hands, for in reported cases where there was complete power to use the hands the faculty of writing was lost.

Clinical Proofs.—Dr. Gordinier said that good authorities in neurology, such as Trousseau and Dejerine, denied the separate existence of speech and writing centers. One of Trousseau's reported cases, however, shows that there is a separation, since aphasia existed without agraphia. Cases reported by Charcot, by Mills and by Banti show the same thing. Some of these patients, unable to talk, carried note books in order to express their ideas. Banti's case at autopsy showed a degeneration of the posterior portion of the third frontal convolution, Broca's region, the pathological condition being limited very closely to this region. Dr. Gordinier has himself had a case in which motor agraphia existed distinct from aphasia. It is sometimes said that agraphia depends on a subcortical lesion of Broca's convolution or the neighboring cortical areas. Drs. Frankel and Onuf showed, however, by an analysis of over 100 cases of aphasia, with and without agraphia, that motor agraphia does not depend on a subcortical lesion. It seems clear then that the center for writing must be considered as distinct from the speech center, both existing in the cortex.

Medical School Inspection, New York City.—Dr. Henrietta Johnston of New York city, said that the introduction of school inspection has shown that schools were used as day nurseries by the poorer classes. Such diseases as chicken-pox, measles and mumps were considered as not requiring segregation, but on the contrary mothers thought, as a rule, that the children would be better taken care of at school than at home. The possibility of the prophylaxis of these diseases has been shown to parents, and the work of inspection has thus had a general sanitary significance. During the first year of school inspection in New York city over 100,000 examinations were made and some 6,000 children excluded from school. It is easy to realize how much contagious disease this probably prevented. During the summer months, so dangerous to child health in large

cities, the school inspectors became a board of tenement house visitors. Altogether 30,000 houses were visited and 270,000 families attended. Many minor nuisances were abated and children saved by timely advice.

Eye Diseases and Their Recognition.—Examinations made over a year ago showed that there was a large number of contagious eye diseases among the pupils of the lower East Side schools in New York city. These occurred mainly among Russian Jews, and had been contracted at home and were liable to spread. Later the examination of 60,000 children showed 6,000 with contagious eye diseases, over 1,000 of them in need of immediate operation. These diseases occur much more frequently in boys than in girls. In the last month over 900 fresh cases of contagious eye disease have been reported, showing the necessity for the greatest watchfulness to prevent the spread of the disease. Now school inspectors are instructed to examine especially the children of the primary and kindergarten departments, and to take special note of the condition of the eyes, throat and of the hands. During the existence of the system of school inspection over 2,000,000 children have been examined and 40,000 have been excluded from school for hygienic reasons.

Care of Insanity.—Dr. Charles G. Wagner of Binghamton described the altered conditions for the treatment of the insane that have come in during recent years. Instead of the gloomy prison-like buildings, with the narrow, high-fenced yards, for the patients' airings, known to attendants and patients as the bullpen, insane asylums now seem more like busy villages. As much liberty as is consonant with safety is allowed the patients. Especially are they given occupations and are tempted into the outer air. It is said that psychiatry has not kept pace with therapeutics in other departments, but fresh air, wholesome food, abundant exercise and encouraging surroundings, without violence, has done much to remove this reproach.

Asylums as Curative Institutions.—The public should now be taught to realize that asylums are not mere places of detention of the insane, but that they are true hospitals in which mental diseases are treated, and cured. If this idea were more prevalent patients would be sent to asylums earlier, where there is more chance of cure, instead of being allowed to waste precious time at home under indifferent treatment. One thing is needed at asylums at the present time. It is a ward or department for acute cases. These, with proper care, could often be sent home cured in a short time. Contact with chronic cases does them harm and may perpetuate their condition.

Psychiatric Wards.—Dr. Floyd S. Crego of Buffalo said, in discussing Dr. Wagner's paper, that all the hospitals of large cities should have special wards for the treatment of acute insanity. These wards exist at the Neues Charité in Berlin, and at the hospital at Heidelberg, where Kraepelin has found them of excellent service. Instead of a mere detention pavilion, as at Bellevue, where patients are kept for five or six days in these institutions patients remain under treatment for months or until it is deemed necessary to transfer them to a county institution.

Dr. Wagner, in closing the discussion, said that undoubtedly there was need of the special departments for acute mental diseases in every hospital. There was even more need, however, under present circumstances, for such wards for acute cases at asylums. The heads of families might by their means often be given back to the support of the families in a comparatively short time.

Spinal Disease Differentiation.—Dr. Floyd S. Crego of Buffalo said that no diseases were so often con-

founded by the practitioner as those of the spinal cord, and in no class of diseases is recognition more important. For knowledge of spinal diseases the anatomical details of the blood supply to the cord are very important. There is a long, slender anterior spinal artery and two corresponding posterior arteries. As blood-pressure drops very rapidly in a long, thin tube, there are anastomoses all along the spine that re-enforce the blood supply. Above the thyroid arteries send branches into the canal and below the lumbar arteries anastomose. Usually the intercostal arteries communicate with the spinal vascular supply. At times, however, these intercostal sources fail, and hence the dorsal region is insufficiently supplied with blood or has no surplus for emergencies. Hence the frequency with which injuries in the dorsal region are followed by true organic change. The spinal arteries themselves anastomose by means of several hundred delicate branches. These are easily injured. Hence the facility with which serious lesions of the cord may occur.

Hysterical and Organic Disease.—Dr. Crego insisted on the necessity for realizing that whenever there was serious injury of the spinal cord or of any part of the nervous system, besides the symptoms due to the actual pathological condition, functional or hysterical symptoms are liable to develop. These greatly obscure diagnosis. The examiner must learn to get below the hysteria to the true state of affairs in the cord, which is often masked. This more than anything else has brought discredit on the science of neurology, for in the examination of persons injured in railroad accidents and the like, when a question of damages is involved, supposed experts differ very much in their estimation of a case. Dr. Crego detailed an experience in which physicians pronounced the condition hysterical, yet when under the influence of hypnotism the patient could not be suggested to move actively. An autopsy six months later showed the case to have been myelitis. Dr. Crego also called attention to the confusion sometimes made between locomotor ataxia and neuritis.

Erythrophloeum.—Dr. Reynold Webb Wilcox of New York city summarized the results of 50 observations made with this drug, which is obtained from one of the so-called ordeal barks of South Africa. It has been adopted by the British Pharmacopœia Committee of Conference, and is semi-official in England in a 10-per-cent. solution. The remedy produces a marked rise in blood-pressure and slows the heart, much as digitalis does. It practically represents the therapeutic value of ergot and digitalis. In weak hearts, because of the rise in blood-pressure, it would be contraindicated, but would seem to be best suited for the laboring hearts of stout people, or where with fair compensation digitalis refused to act. Its action is noted three to four hours after its administration, instead of 36 to 48 hours after, as is the case with digitalis.

In answer to a question of Dr. Alfred Mayer of New York, Dr. Wilcox said that the drug can be obtained through any large drug house.

American Climates for the Tuberculous.—Dr. James K. Crook of New York said that we did not need to go outside of our own territories now, in order to find a suitable place for any consumptive. The shore of Long Island, especially Long Beach, Nantucket and Block Island, have a low Summer temperature and not a large range of cold weather in winter. Cold is no longer considered bad for consumptives, and Sullivan County and the Adirondacks in New York State prove very favorable for many consumptives. In our new possessions there is a choice of insular climates that makes selection easy.

The Fire Escape as a Health Resort.—Dr. Alfred Mayer of New York, in discussing Dr. Crook's paper, said that for poor patients, unable to get away from the city, the fire escapes of tenement houses proved an excellent place to recommend to consumptives. He has had some excellent results from all-day life in the open air, even in apparently unfavorable localities. There is a law against it in New York, but the Fire Commissioners said they had nothing to do with it and referred to the Building Department, which also denied any connection with it. Meantime the practitioners among the poor must not forget this means of keeping patients constantly in the open air, which is after all the main feature of the modern treatment of tuberculosis.

Retinoscopy.—Dr. Wiesner of New York city described the use of the retinoscope as a means for calculating the condition of a patient's eyes as regards refraction. The only instrument needed is a piece of mirrored glass with a hole in the middle. The reflection of the light from this mirror on to the pupil gives a distinct reflex. If this light reflex from the cornea moves with the light from the mirror in all meridians, then the eye is hypermetropic. If it moves in the opposite direction, then it is ametropic. If the reflex behaves differently at different meridians, astigmatism is present. The amount of lens that must be placed between the retinoscope and the eye to correct the abnormal movement of the reflex represents the error of refraction. Retinoscopy should never be the sole means of determining refractive errors, but it is a valuable aid to others.

The Ophthalmoscope.—Dr. Francis Valk of New York, set forth the advantages of even a limited use of the ophthalmoscope by the general practitioner. It gives important information with regard to the brain through the optic nerve; with regard to the blood vessels; the general system, since it so often reveals the presence of miliary tubercles or of albuminuric disturbances due to chronic but insidious nephritis.

Treatment of Purulent Conjunctivitis.—Dr. Edgar S. Thomson of New York city said that the first step in the management of a case of purulent conjunctivitis is to decide by the microscope or by culture methods just what bacillus is present. This should not delay treatment, for it is often almost indispensable to begin treatment at once. A delay of even a few hours in gonorrheal ophthalmia may mean the loss of the eye. If the symptoms are those of gonorrheal conjunctivitis abundant creamy pus, intense ecchymosis and discomfort, then a silver salt should be applied at once. In spite of all that has been said recently about newer silver salts, silver nitrate still remains the most efficient for this purpose. It has a special destructive action upon the gonococcus. It should be used in the strength of a 2-per-cent. solution. This should be applied on a swab, every portion of the cul-de-sacs and the palpebral conjunctivæ being reached. Not infrequently the nitrate of silver excites considerable reaction, that for a time apparently increases the secretion. The eye must be kept thoroughly cleansed—washed out every ten minutes, if necessary. For this saturated boric acid solution is the best, not as an antiseptic, but as a non-irritant wash.

Other Silver Salts.—If nitrate of silver proves too irritant, so that the conjunctiva bleeds easily, then a 6-per-cent. solution of protargol may be substituted for it. This may be used also in the milder forms of purulent conjunctivitis, those due to the pneumococcus, to the Koch-Weeks bacillus, etc. These do not as a rule require the severer treatment with nitrate of silver. There are probably no mild cases of gonorrheal con-

conjunctivitis, though they used to be spoken of. It was announced that these newer silver preparations would not stain the conjunctiva, even after prolonged use, but recently some cases to the contrary have been reported. Cold applications are useful in the treatment of purulent conjunctivitis, since it is possible to bring the tissues to a temperature not so favorable to the growth of micro-organisms. For this reason they are better than warm applications, but sometimes these latter will be found more permanently soothing to the patient.

Transportation and the Ophthalmic Referee.—Dr. Justin L. Barnes of New York city read a paper in which he insisted on the necessity for all railroad employes who had to do with signals, and especially engineers, being properly tested by an expert as regards their powers of vision. In the West most of the railroads have a medical expert to whom the question is referred. The Eastern railroads depend on testing by yard-masters and the like. Dr. Barnes pointed out the liability to fallacies of such testing. In cases of central scotomata the applicant may see with the eccentric portions of his retina when his attention is especially directed to an object, though he would miss it by direct vision. Then color-blindness is most illusive. Patients who do not properly recognize colors may be able to judge by quantity of illumination of the color, though at a distance or in foggy or cloudy weather this would be impossible. To risk large numbers of lives in the hands of improperly tested engineers is to court danger, and it will surely result in serious accidents, as the first accident in 1876 which in Sweden called attention to this defect of vision.

Practical Tests.—Dr. Freudenberg of New York city said that engineers objected to the matching of color tests with wool, because they were expected to be able to recognize only four cardinal colors: red, yellow, blue and green. It is the naming of colors that is important for them. Sometimes, as has been shown when men fail to match colored yarns, they yet distinguish lanterns very well. On the other hand the power to match colors does not always give assurance, for at times, after a successful test of this kind, men fail to see lanterns well. It is possible that color-blindness may be relieved to some extent or prevented by training. It is much less frequent now among women than men, and men as the result of color recognition training in schools have less of it than a quarter of a century ago.

Eye-Strain and Headache.—Dr. Lucien Howe of Buffalo explained the origin of the pains that occur with eye-strain. In accommodation for near vision ophthalmologists no longer accept the Helmholtz explanation that the ciliary muscle is relaxed. Observations on the attachment of the suspensory ligament of the lens have shown that it is attached mainly to the posterior portion of the lens capsule, and that during contraction of the ciliary muscle it changes the shape of the lens. This muscular spasm gives rise to the intra-ocular pain. The accessory muscles are called upon to aid in the muscular effort, and the supraorbital and frontal pain (for some people wrinkle their foreheads in the effort of vision) result. When the frontalis is affected the occipito-frontalis portion of the same muscle is drawn into active sympathetic contractions and this accounts for the pain down the back. The occipito-frontalis and the trapezius muscles are so closely connected that it is not difficult to understand how the trapezius also suffers.

Dr. Valk asked how the contraction of a circular muscle, as the ciliary muscle is, could pull upon the lens. He also asked if there were muscular connections

to explain the tired feeling all over, in the back and knees so often when the eyes are overused.

Dr. Howe said that the action of the ciliary muscle is not well understood, but his seems the most rational explanation. Reflexes have been overdone and some would attribute most of the pains and aches of human-kind to muscle and eye-strain.

Incomplete Congenital Occlusion of Vagina.—Dr. Samuel M. Brickner of New York city described four cases of transverse congenital occlusion of the vagina above the hymen. He considers that the condition is due to an embryonic fault and to a reversion to an earlier type. Certain animals, as the chimpanzee, so closely related to man, the dugong and the sheep have these vaginal septa normally. Dr. Brickner considers that the septum retains spermatozoa and so makes the animals more liable to pregnancy. One of Dr. Brickner's patients experienced this effect of the septum in her case, as she has had frequent children at short intervals.

Hydorrhea Profuena.—Dr. Henry D. Ingraham of Buffalo reported two cases of this rare condition, known also as hydrops tubæ profuens. The first patient, married, one child, suffered from gushes of thin, watery fluid which did not stain the napkin. After curettage the thin, watery discharge came on again. Small elastic mass at side of uterus before discharge. The right tube seems enlarged and folded on itself. The second patient, unmarried, school mistress. No leucorrhea. Ten days before menstruation she feels uncomfortably full, then there is a profuse watery discharge to which there is no color and no odor. She estimates the discharge at a quart, and it wets all her clothes.

Vaccine and Vaccination.—Dr. Peter H. Bryce, Secretary of the Provincial Board of Health of Ontario, Canada, gave some scientific and practical details regarding vaccine and vaccination. He said that most of the physicians of the United States and Canada had never seen a case of smallpox until this last few years. Yet the disease was the most frequent and the most fatal of contagious diseases during the eighteenth century. At that time it caused one-tenth of the diseases and spared neither rich nor poor. The cases recently have been so different in certain ways from the classical smallpox that some doubt in the minds of many medical men had arisen whether the disease, brought from Cuba in 1898, and which has spread so widely, is really smallpox. In order to find cases like some of those now seen, it is necessary to go back to the days of Sydenham and Van Swieten. The problem is solved, however, by vaccination. This process proves as distinctly protective against even the anomalous types of the disease as now seen, as against the most classic smallpox.

Vaccination protects absolutely against smallpox for about 10 years. In some persons the period of immunity to the disease after vaccination reaches 20 years. Even then the full measure of protective influence does not expire by limitation, but makes even a subsequent attack of smallpox less severe than it would otherwise be. It is a little difficult to understand then why there should be so much opposition to vaccination. The enactment of the conscience clause in England, the original home of vaccination and usually so conservative in her legislation, is a striking index of this opposition. Dr. Bryce considers that the opposition can be traced to the enforcement of compulsory vaccination. If diphtheria serum were required to be used by law there would inevitably be opposition of the same kind.

Legal Enforcement and its Duties.—Where vaccination is compulsory the government is bound to furnish vaccine of good quality itself, or to see that it

can be readily obtained by the people. Many of the difficulties with regard to the employment of vaccine are now being eliminated. At its original introduction Jenner said that the most material indisposition after vaccination is not due to the vaccine primarily, but is due to neglect in its collection or storage or improper application. Now it is clear that he anticipated without knowing the scientific reasons some recent work with regard to secondary infection. Secondary infectious material can be destroyed by glycerinization of the virus. Like every good thing, however, glycerinated virus had a fight for its life. From statements in medical journals at times one might despair of it. Its use will, however, undoubtedly rid the practice of vaccination of most of its dangers. Dr. Bryce suggested that every state that compels vaccination should enact a legal standard for vaccine material and see to its enforcement. Besides this, every municipality should have an official vaccinator, who should be held responsible for the vaccination of all children during the early months. The knowledge and experience thus gained would undoubtedly prove of the greatest service in extending information with regard to the practical side of vaccination.

Sterilized Milk and Clean Milk.—Dr. C. W. M. Brown of Elmira discussed the disadvantages of milk sterilization and pasteurization. Prolonged boiling makes the milk not only less pleasant, but less digestible as well. The secret of milk for infant feeding is to have clean milk at the beginning and then cool it at once to a temperature at which bacteria will not grow. Dr. Jacobi might well say at the last meeting of the American Medical Association at Saratoga that the greatest advance in pediatrics in the last 10 years is the initiation of the movement for clean milk. This requires clean barns and neat farm hands and clean animals. Dr. Brown has found, however, as the result of investigation with a pure milk committee of Elmira that even a town of 40,000 inhabitants can by insistence secure a good, clean milk supply. Sterilization and especially boiling may still have a place, but they must not be depended on as they used to be.

Examination of Milk by the General Practitioner.—Dr. Henry L. K. Shaw of Albany outlined a scheme for a rapid, simple and accurate method of examining either human or cow's milk. The importance of testing the acidity of the milk was dwelt upon. Milk with an acidity over two-tenths of one per cent. is not fit for drinking purposes. The determination can be made either by a simplified titration method or by the use of Farrington's alkaline test tablets. The next step is to obtain the specific gravity. The author had a small Quevenne lactometer constructed with a thermometer. This is graduated from 1020 to 1050 and requires a little over half an ounce for a reading. Lactometers are standardized at 60° F., and the correct reading can easily be obtained when the temperature of the milk is known. The specific gravity of mother's milk averages 1030, and it is lowered by an increase in fat and raised by a high percentage of proteid. If the specific gravity of cow's milk is less than the normal (1029 at 60° F.) one of two things may be assumed. Either the milk contains an unusual amount of cream or the milk has been watered. If, on the other hand, the specific gravity is higher than normal and the percentage of fat is low, it is fair to assume that the milk has been skimmed. The percentage of fat is obtained in many ways, but the writer prefers the Babcock method. The percentage of sugar varies very little and its estimation is not required in an ordinary routine examination. The total solids of the milk can be determined from the corrected specific gravity and the percentage of fat. The

Babcock formula consists of dividing the specific gravity of the milk by four and adding to this $\frac{1}{4}$ the per cent. of fat. This will give the solids not fat, and adding the per cent. of fat to this product, the amount of the total solids is obtained. A sliding milk scale has been recommended by Richmond based on this formula. By it the corrected lactometer reading and total solids can be ascertained at a glance without applying any mathematical formulæ. The amount of proteids can be estimated approximately by subtracting the percentages of fat, sugar and salts from the total solids. The Hehner and phloroglucin tests are recommended for the detection of formalin in milk.

Milk and Infection.—Dr. Scott of Niagara Falls in discussing Dr. Brown's paper said that the greatest care is needed to keep milk from becoming a source of infection. There was not long since an epidemic of diphtheria in Niagara Falls, the cases all occurring along the route of a single milkman. Investigation showed that one of the farmers from whom the milkman obtained his milk had had a case of malignant diphtheria in his family. For several days after the child became ill a physician was not called in, and after his diagnosis the cows were sent to a neighboring farmer. In spite of this precaution, eight days later diphtheria began to develop among consumers of the milk. Several other persons in the family had had sore throats before the malignant diphtheria, and it seems not unlikely that these also were diphtheritic. A series of cases of scarlet fever has also developed that is now under observation, and so far it seems possible to trace it to the milk supply.

Simple Technic of Milk Examinations.—Dr. E. E. Smith of New York city said that the use of a 5 to 10 c.c. pipette would simplify the directions suggested by Dr. Shaw for milk examination. A properly corrected urinometer would also serve the purpose of a lactometer, and save an additional instrument. With regard to the proteids of milk their importance must not be immunized. They occur in two forms, casein and albumin. When the casein is in excess the milk is apt to be especially irritating to young stomachs. Even in mother's milk casein, which is much less than that in cows milk, may become increased to an irritant condition.

SYMPOSIUM ON HEMATOLOGY.

Blood Examination in General Practice.—This paper was read by Dr. Irving P. Lyon of Buffalo.

Dr. Lyon described a case in which with acute serous pleurisy there was a very high leucocytosis from the very beginning. Some serum was withdrawn, but little relief followed, and the family was told that probably a central pneumonia was developing. This proved to be the case, although the first signs of the pneumonia did not become manifest until the seventh day. The whole lung then became solidified and the patient died on the 11th day. In a case of supposed puerperal fever the high leucocytosis, with the presence of a positive iodine reaction, led to the suspicion of the presence of abscess. At operation this proved well founded, an abscess being found alongside the uterus. Its evacuation led to the patient's improvement. In a patient who had proved a puzzle to many physicians, occasional chills with high temperature, malaria, appendicitis, and leucemia had been excluded. The boy kept his knee on the left side flexed and drawn up. Movement of the leg caused pain in the left flank. A high leucocytosis consisting mainly of neutrophiles was found and a collection of pus seemed surely to be present somewhere. It was concluded that it must be around the kidney, and as the little patient's health was visibly

deteriorating from the infectious process, it was concluded that an exploratory incision should be made. About 2 drams of pus was evacuated from a pocket back of the kidney, and the patient recovered. In a patient who suffered from some of the symptoms of appendicitis the affection improved and operation seemed inadvisable, but the high leucocytosis, consisting mainly of neutrophils with an intracellular and extracellular iodine reaction, proved a warning signal of danger. At operation a gangrenous appendix just about to rupture was found. Dr. Lyon considers that these cases illustrate how advisable it is to have a routine daily blood examination in connection with other work of a diagnostic nature in all serious cases. In the perforation of typhoid fever, in trichinosis, in animal parasites generally, in malaria almost positive indications of the conditions can be found at once in the blood when all other diagnostic means are at fault.

Significance of Eosinophilia.—Dr. Duncan Bulkeley read the paper of Dr. Thos. Brown of Baltimore on this subject. Normally there are 2 per cent. or slightly more of eosinophiles in the blood. Where they come from is not definitely known. Ehrlich's theory which attributes their presence to the chemotactic influence of toxins in the serum which draws them out of the bone marrow where they seem to exist normally, is the most acceptable. In bronchial asthma, however, and in nasal polypi it is possible that they are formed in situ from neutrophilic leucocytes already present. The granules which take the eosin stain were thought by Ehrlich to be surplus nutriment stored in the cells. This theory has not been controverted, though there are times when eosinophilia is too much of a pathological condition to be merely this. In splenomyelogenous leucemia there is an enormous eosinophilia. In fact this seems to be the differential symptom of the condition. Practically all the intestinal parasites cause eosinophilia, and especially the *Anchyllostomum duodenale*. At Johns Hopkins it was shown some years ago that eosinophiles were present in large numbers in the blood of a patient suffering from trichiniasis. Since then this has become a recognized pathognomonic sign of the disease and trichiniasis has been found to occur in mild form much more frequently than used to be thought. In tuberculosis the presence of eosinophilia is said to make for a favorable prognosis. In mild cases of scarlet fever or those with good vitality, eosinophilia is found in the first and second week. By the detection of abundant eosinophiles bronchial asthma may be differentiated from renal or cardiac asthma almost at once, thus saving the physician, patient and family needless disquiet.

Degeneration of Red Blood Cells.—Dr. J. C. Da Costa, Jr., of Philadelphia, read a paper on the present knowledge of the pathology of the red cell in the blood. Besides the differences in color and shape the significance of which is quite well known, there are degenerations of the protoplasm within the cell that have attracted attention. Polychromatophilia, or the taking of stains differently by individual cells, shows variations in the constituents of the red blood cells that always point to some degenerative process at work, although the real significance is not known.

Granulo-basophilia of the red cells is the most important reaction in our knowledge of the pathology of the erythrocyte. It is a reaction to basic stains that shows granules of material near the edge of the cell usually grouped together. It may occur in the portions of protoplasm outside the red cells which are so constantly seen in blood examination, and which correspond more or less to blood platelets. This change in the red cells always has a pathological significance.

It has been found by many observers to occur constantly in lead poisoning. In fact, it may be recognized in the blood long before there is any colic, constipation, nervous symptoms, or blue lines on the gums. It has been produced in small animals in 24 hours after the administration of lead acetate. Grawitz kept mice at a temperature above that normal to them and the animals developed this reaction in their red blood cells. Later the animals became accustomed to the high temperature and the granulo-basophilia disappeared. It seems probable that some of the hitherto inexplicable tropical anemias are due to this condition and that one of the secrets of acclimatization is here laid bare. The symptom has been noted also as a sign of latent malaria and as a helpful aid in the diagnosis of sepsis.

Significance of Iodine Reaction.—Dr. Locke of Boston said that if to a thin film of blood there be added a drop of iodine dissolved in solution of iodide of potash under normal conditions all the red cells are stained yellow. Under pathological conditions, however, the color after the application of iodine becomes a copper red. Not only are the red cells thus stained, but also the portions of extra corpuscular protoplasm that occur in blood and probably represent the blood plaques. This reaction has been known for some time, but its exact significance has not yet been decided. Ehrlich who first discovered it thought it due to the presence of glycogen in the red blood cells. Glycogen takes this color from iodine. Certain it is that the presence of the iodine reaction or iodophilia, as it is sometimes called, means that the patient is in a serious condition. It occurs in severe toxemia, in septicemia, in abscesses, from which septic material is being freely absorbed; in empyema, salpingitis, tonsillitis, and impending gangrenous processes in the intestines. It is not a pathognomonic sign of anything special, but it always has a serious significance, and is helpful for differentiation.

SECOND DAY, JANUARY 28TH.

The Surgeon's Enemy—the Skin.—Dr. Robert H. Dawbarn of New York made some practical suggestions with regard to the warfare that must be carried on between the surgeon and the bacteria in the skin. He believes that the surgeon should protect his aseptic patient from himself by gloves and protect himself from the septic or syphilitic patient by the same means. Dr. Dawbarn suggested that gloves may be mended by means of a pyrographic cautery and patches taken from older gloves. For the fingers test tubes are inserted, as in mending stockings, forms are used. For patching the palms pressure is produced by two flat-irons. Gloves thus mended will stand boiling and antiseptic solutions.

Dr. Dawbarn said that the chief danger is from the numberless microorganisms in every drop of sweat and setum. For this the patient must be protected against himself as well as against the surgeon. By rubbing in a combination of some indifferent powder as lycopodium stearate of zinc or talcum with alum in a proportion of 4 to 1, the skin will not allow glandular secretion for some time, so that even in the high temperature of the operating room there will be no sweat for hours. The effect of the astringent is noticeable not only in the skin of the operation site, but also on the surgeon's hands. Prof. Koenig of Berlin has been so much impressed by the dangers to the patient from the secretions of the hands that he has devised a special set of long forceps which do away with the necessity for the insertion of the surgeon's hands into the abdomen. With these his last 600 cases have been absolutely without a sign of infective reaction. About the genital region especially the skin is apt to harbor

micro-organisms. The use of rubber tissue which covers the skin area, is adherent to the skin, and is cut with it, has been suggested, but it is expensive. The astringent powder method suggested by Dr. Dawbarn is especially suitable for these cases in the genital region, and it gives excellent satisfaction in varicocele and in hernia operations.

Depilatory or Chemical Shaving.—Dr. Dawbarn suggested the use of a concentrated solution of hydro-sulphate of sodium (25 per cent.) as a means of removing the hair from the axilla and the pubis instead of by the razor. The solution is faintly greenish in tinge, but is watery and unirritating. It completely removes the hair, yet without destroying them. In children, in women, with high axillae and in other conditions, it is practically effective. It might be used on the eyebrows without danger, since it is unirritating, and on the lips, since it is not poisonous.

Technic of Prostatectomy.—Dr. Ramon Guiteras of New York city said that a few years ago prostatectomy seemed a difficult operation, whose accomplishment would never be common, and whose technic could not be simplified. Now it is known that prostates can be easily removed, and even general surgeons take up the task readily. Dr. Guiteras considers that better than the suprapubic route with its dangers of infection in the perineal route, which provides good drainage naturally. French surgeons prefer the transverse incision in the perineum somewhat in front of the rectum, but the route through the prostatic urethra is easier and more satisfactory. An instrument is needed to pull down the prostate so that the surgeon can enucleate it. For this Dr. Guiteras at first employed the rubber balloon devised by Dr. Parker Syme, but he found this scarcely firm enough in its pressure. He devised a special instrument for the purpose which gives very satisfactory results. It is a sound shaped like a stove lifter, with the distal end flattened, so as to enable it to exert firm, even pressure. With this the prostate, no matter what its size, can be brought well into the wound.

Contraindications for Prostatectomy.—These are now better and more definitely known than before. Old feeble patients and those suffering from heart disease should not be operated upon. Any kidney disease is an absolute contraindication. Any infection of the urinary tract makes the operation serious. The condition of the bladder, however, is almost a negligible factor. With good drainage it will improve. Even when for years the bladder has been overdistended and is in an extremely atonic condition, it will improve and resume almost its normal function again.

The purely scientific business of the session was then interrupted for the reading of a

PANEGYRIC OF VIRCHOW

by Dr. C. A. L. Reed of Cincinnati, the sometime president of the American Medical Association. Dr. Reed's address was a masterly effort that described the career of Virchow in all its mansidedness as a model for the aspiring physician of all times and places.

Dr. Jacobi, in moving a vote of thanks to Dr. Reed, said that the address came very suitably from an American before an American Medical Society, and that, too, the oldest in the country. For Virchow liked Americans. He admired the way in which the army medical department made use of the records of the civil war to give the rest of the world information as to wounds, their treatment and outcome.

The President's Address.—Then followed the address of the retiring president of the Society, Dr. Henry R. Hopkins of Buffalo. He called attention very forcibly to the advisability of the creation of a special de-

partment of public health, the head of which should have a seat in the President's cabinet. This would prove of the greatest possible material benefit to this country, the best example of which is to be found in the good accomplished by Dr. Leonard Wood in Cuba. Dr. Hopkins dwelt on the necessity for union in the medical profession, and said that only a certain feeling of pride and custom kept organization apart, whose reunion would do much for the interests of the medical profession. The profession must continue agitation and organization until there shall be only one examining board instead of three as now. Already the public are impatient with the present system. There must be even more and more discrimination in the acceptance and licensing of applicants to practise medicine. At present the Empire State is satisfied with requirements much less than those demanded for the army, navy or marine hospital service. This is not worthy of the relation of a great state to its people. Better medical education and training is needed, especially for health officers. More than anything else the unity of the profession will bring these needed advances in its train.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Meeting of December 19, 1902.

Reception Given to Prof. Adolf Lorenz, of Vienna.—The President of the Academy, Dr. Robt. F. Weir, called the meeting to order and delivered a brief address, then turned the meeting over to Dr. George R. Elliott, Chairman of the Section.

Dr. Weir remarked that an introduction of Prof. Lorenz was almost superfluous, as he was well known, not only in his own department, but in advanced science generally; that his demonstrations of his methods in this country were of educational value to the American physician as well as of great benefit to the special department of orthopedic surgery. The opportunity of actually seeing Dr. Lorenz at work offered a chance of learning altogether different from and in advance of simply reading about his methods, as object teaching is a superior educational method. His special peculiarities were observed in a way not revealed from his writings.

Dr. George R. Elliott said, as Chairman of the Section of Orthopedic Surgery, it was a great pleasure to give expression to the honor the Section felt in having Prof. Lorenz present. It was also a great personal satisfaction to know that his work had received some of the recognition it deserved. From medical men much had been said about the great force used. It was true that Prof. Lorenz was a very strong man, but those who had seen him operate must have observed that the essential element in his operations was the intelligent direction of that force, graduating it to overcome the resistance of the contracted tissues, so that they were reduced to a state of flaccidity. Dr. Elliott further said that six years ago he reported his first case of congenital dislocation of the hip successfully treated by the Lorenz method, and in the report made the following statement: "The operation which we have just considered is a real advance in surgery and, throwing all enthusiasm aside, I feel convinced that it will soon be performed with strikingly good results in all civilized parts of the world." It was unnecessary to say how that prediction had been fulfilled.

Dr. Elliott then called upon Prof. Lorenz to address the meeting.

Address of Prof. Lorenz.—"I consider it a great honor to be allowed to appear before you and I know

of no better way to show my gratitude than by asking your permission to explain to you some of my principles which hitherto have ruled my orthopedic work.

"I hope to meet your approval at least regarding some of these principles, as to others which may rouse your opposition for the moment, I hope you will find them worthy of your objective trial. Even if these principles do prove to be different from yours, certainly we who are on both sides of the Atlantic, which divides the places of our work, completely agree on the same aim, that is, to help our patients in the best way. As to my methods, I can recommend them as both safe and successful to the patient. In saying this, I touch upon my leading principle, that is, curing my patients without danger of loss of life. Luckily deformities seldom offer what we call indicatio vitalis, therefore, when we operate on deformities we should never arouse even the possibility of putting the life of our patient in danger. Following this principle, I generally prefer bloodless operations to the bloody ones. Usually the results are the same, but in many cases those of the bloodless ones are even better. As long as the bones are elastic enough, I prefer osteoclasia to osteotomy; this latter operation is exclusively reserved for adolescents and adults. In hip deformities I prefer bloodless corrections to osteotomy as long as even the slightest motility of the joint can be stated; only in cases of complete bony ankylosis do I operate with the chisel.

"All cases of knee contracture I correct by the intra-articular modeling redressment as long as even the slightest motility can be found. Only cases of complete bony ankylosis of the knee-joint, which are rarer than is usually believed, are reserved for the bloody operation.

"In all deformities of the foot, both paralytic and congenital, I rely exclusively upon my modeling redressment of the foot, and from a thousand-fold experience I can assure you that the results are generally beyond expectation. In my opinion the wedge-shaped excision of the bones of the foot, newly recommended by the French, is nothing more than a deplorable mutilation of the foot. The results of the modeling redressment of clubfoot have been preferred by many others and I am happy to say that at least in Germany, this method is predominant.

"On the whole, I daresay that I prefer bloodless operations to the bloody ones as long as any possibility exists of securing the result in this way. According to this principle, I cannot sympathize with the total extirpation of the sterno-cleido-mastoideus in wryneck. After my experiences the subcutaneous myotomy of this muscle in connection with the modeling redressment of the cervical scoliosis is perfectly sufficient to cure the *caput obstipum* thoroughly and without leaving a scar. In this realm I go even further, as the congenital *caput obstipum* in children can be cured even without tenotomy, only by myorrhexis of the sterno-cleido-mastoid muscle, and the results obtained by this method are the most perfect ones from a cosmical standpoint. The ruptured muscle regains its normal length as well as its normal elasticity to such a degree as to allow the head to move freely to the opposite side. Besides this, the ruptured muscle retains a normal prominence with its partner, restoring the normal configuration of the neck, in this way avoiding the known appellation of the operated side which usually occurs after open or subcutaneous myotomy.

"Following this principle you will share many advantages with your patient. The latter readily consents to be operated upon as he runs no risk of life, and as for yourself, you will feel quite easy about him.

"Another principle which I have always followed is the so-called central correction of deformities, which means that every deformity should be corrected in the vertex of its angle. If you should prefer to correct a deformity in one of the sides of the angle, even near the vertex, the deformity itself would remain and instead of a correction you would have only a compensation for the deformity. This compensation implies some shortening of the side of the angle, that means of the leg, which shortening should be avoided under all circumstances. This principle is very important with regard to the contractures of the hip-joint. It is obvious that subtrochanteric osteotomy contradicts the above-mentioned principle. By correcting or compensating the deformity you shorten the leg. Agreeing with the principle of central correction, I always do central, that is, pelvotrochanteric osteotomy. Having performed this operation, correction is very easy without causing any further shortening of the leg. I object even to oblique subtrochanteric osteotomy, although it avoids shortening by a complicated and difficult extension after treatment by which the patient is confined for some weeks to his bed instead of being able to get up a few days after the operation.

"Following the principle of central correction you will also object to supracondylic osteotomy or osteoclasia in correcting the contractures of the knee-joint. In preferring central, that is, intra-articular correction, you will avoid shortening the limb. In correcting genu valgum the principle of central, that is to say, intra-articular correction cannot be thoroughly attended to because—except in cases of young children—a loose knee is to be feared, and besides the treatment takes too much time. In genu valgum supra-condyloid osteotomy is still the predominant method because of its general reliability, but beyond doubt epiphysiolysis on the lower end of the femur allows better correction of the deformity, being a more central method than the supra-condylic osteotomy. Unfortunately the method of epiphysiolysis is available only in children from five to sixteen years.

"Another important principle of modern orthopedic surgery is that of absolutely saving the bones by dividing the soft parts as far as circumstances may demand it. This conservatism toward the bones and this radicalism against the soft parts (just the inversion of a principle of former times) condemns all cuneiform osteotomies and resections en bloc, of the bones, and makes it a rule to correct deformities by simple linear osteotomy, sacrificing the soft parts as far as may be desirable. Indeed it is very easy to correct every hip deformity of whatsoever degree by similar linear (pelvotrochanteric) or central osteotomy, after having thoroughly divided the abductors and the subspinal soft parts. It is of no importance whether you divide them in open wound or subcutaneously, you must only divide them thoroughly. The wedge-shaped excisions of bones in correcting knee contractures are likewise to be avoided, or at least to be restrained to a minimum by regardless radicalism against the soft parts in the fossa poplitea. As to the excisions of bones in the treatment of clubfoot, I have mentioned above, I abhor them.

"The principle to correct deformities only by simple linear osteotomy, is even available in those most difficult cases of bowlegs with anterior convexity of the bones. In such cases I apply one or two linear osteotomies to the center of the deformity, then I add Achillotomotomy and sharp screw extension above the ankles until correction is allowed.

"Another principle of common interest refers to the treatment of tuberculous diseases of the joints in children, and to the treatment of deformed paralytic limbs.

I must avoid discussing the question whether operative or conservative treatment should be carried on in these cases. My standpoint on this question is rather one of expectancy. But I do not hesitate to declare that up to now I have never made a resection of a tuberculous joint in children, and that the results of conservative treatment seem to me far better than those of operative treatment. Nevertheless I am far from denying the necessity of operating in some special cases, particularly in common hospital practice. However, the principle of which I will speak refers to the question whether or not mechanical treatment should be carried on in a way to exclude all functional work of the limb during the whole treatment. Observation of nature left alone seems to me to give the answer to this question. If we contemplate a case of hip disease never interfered with by any treatment at all, we learn in many cases that nature unhelpt by our mechanical means, needs no more time to cure the disease than we do. After some two or three years all may be over. During this time the sick child may have been confined to bed by great pains in the hip-joint some months only. During the rest of the time they walk about without the help of crutches as well as they can, using the limb according to the actual state of sensitiveness. After all the disease heals without any suppuration even, and finally we see these children come to us to get rid of their deformity. We find a contracted limb, but fit for function even under the unfavorable mechanical conditions of the deformity. We find the bones solid and the soft parts not so much wasted as we expected; and last but not least, we find that the growth of the limb has not been much interfered with by the disease. These cases are the best objects for operative treatment because the good state of the legs very soon enables them to profit by the correction of the deformity. If we compare one of these cases of natural healing to the results of our mechanical treatment, which may have begun at the first sign of the disease, we will find that we have scarcely shortened the course of the disease. We accomplish that pains have been loosened or suppressed, and that the limb may be in a tolerably good position. But surely we shall find the leg in a wasted condition, the muscles being slack, the bones lacking solidity, being quite unable to support the weight of the body, although pains have long since disappeared. Probably we shall find besides that the growth of the leg has been much interfered with by the disease. There can be no doubt that this deplorable condition of the limb is due to the fact that both by suspension and fixation by our mechanical means the leg has been totally excluded for many years from every function of movement and weight carrying. From this consideration is derived my principle to exclude the diseased limb no longer from a measured function if severe pains will not forbid it. I never allow any movement of the diseased joint, but I suspend the weight only as long as the pains demand it, always taking proper care to procure slight abduction of the leg. As soon as the pains allow it I begin to attend to the muscles by massage. Of the movements, only active and passive abductions are made in the later after-treatment to prevent the tendency to abduction.

"My final aim is to procure a solid ankylosis of the hip-joint combined with good position of the leg, experience having taught me that great mobility and bad function with lack of any endurance are common allies. With greatest enthusiasm I would welcome a method which would procure a true bony ankylosis of the diseased hip-joint, bony ankylosis of the hip and good position of the leg being the condition for the best result both from a cosmetical and functional point of view.

"As you may have seen by what I have said, I make little of the permanent extension. I consider extension only a matter of fixation, direct and indirect fixation together naturally give a greater degree of surety. I have said that every articulation attacked by chronic diseases should not be prevented from function any longer than is absolutely necessary. In saying so I turn against the method of treatment generally used in Germany, which makes the patients wear their pressure relieving and fixing apparatus so long that they become slaves to them. This same principle I emphasize using in the treatment of paralytic deformities. I am convinced we render no great service to our patients by making them wholly dependent upon their apparatus; the limbs atrophy by exaggerated use of apparatus to such a degree that they become useless for any function. It is my practice to correct thoroughly the paralytic deformities by modeling redressment, in case of need combining the transplantations of the tendons, and to fortify the rest of the muscles by massage and exercises in order to secure the obtained correction. For the rest, the patients must be accustomed to make use of their legs as much as possible without apparatus, or by assistance of the simplest one. Generally a flannel bandage or laced boot will give the necessary support. In any case I take care to secure the corrected position during the night by means of a simple apparatus. I think that enclosing the leg in a steel support is to be avoided as by so doing the leg will be excluded from any function. On the contrary, I try to make the leg independent of mechanical appliances as far as possible. Only in the treatment of total paralysis, which fortunately occurs rather seldom, the permanent use of mechanical support is indispensable. In the treatment of scoliosis I am wholly against the exclusive application of mechanical supports, especially against those which are worn day and night. I restrict the use of corsets to special cases which evidently want a support. Besides I take special care of the muscles of the back by exercising them and endorse the necessity of forcible anti-scoliotic gymnastics.

"Gentlemen, I think it is unnecessary to follow these principles in detail, and I hope you will not object to my endeavoring to solve the problems of orthopedic surgery by operative treatment, and if possible by a bloodless one, and to restrain and simplify orthopedic appliances.

"If the surgical task has been thoroughly solved, orthopedic appliances, if necessary, may be of very simple construction so that special mechanical ateliers may be considered superfluous. If orthopedic surgery conceives and carries out its themes in such a way, then it will be possible to indulge in orthopedic surgery at every surgical station, even if great mechanical means may not be at hand. Then orthopedic surgery will not deny its democratic character which it must have to be able to communicate its progress and improvements to even the poorest children who may be in want of relief."

Dr. V. P. Gibney said that he would like to tell the Fellows of the Academy of Medicine just how much he had learned from Prof. Lorenz. He said: "All this information given us this evening about bearing weight on the joints, about correcting deformities, about destruction of muscles which produce deformity, especially the adductors, has been something of a revelation. Nearly all the medical men and medical students in this city, during the past week, had the opportunity of witnessing his magnificent demonstrations. At the Hospital for Ruptured and Crippled he gave us his views about the management of hip disease, clubfoot and wryneck, and while it seemed at first that they were rather antiquated, when Dr. Lorenz began to elab-

orate them, he felt that they were in the presence of a master. Many years ago we were taught to believe that the function of orthopedic surgery was to correct deformity. That, he observed, was still the English version, as the London orthopedists, whom he had met, had little to say about the prevention of deformity. Dr. Lorenz said at his clinic in Vienna, he allowed the mother to tell the story, and the mother would speak of the pain, the expression of abscess formation distending the tissues about the hip-joint. We had been able in our hospital work for many years to predict this abscess formation. We find that in most cases a plaster-of-Paris bandage absolutely fitted to the hip, knee and malleolus, extending from the free ribs down to the foot does control pain, and the child from having twenty or more cries at night will have few or none. Sometimes we get a case which does not yield, then we apply light and heavy traction in the line of the deformity. Finally we discover a deep abscess. Lorenz tells us only a confirmation of our own views that the pain in hip disease comes in exacerbations. We do not quite agree with him that it is necessary to give up traction. He employs traction sometimes, but simply for fixation. He further claims that we employ traction for too long a period, that we cause atrophy of muscle and destroy functional activity. His idea is to employ traction over short periods; he does not allow deformity to occur at all. We asked him if he aimed to get functional restoration, to which he replied, 'Yes, five or ten times in a hundred.' All orthopedists, I think, will agree that our aim is to get the hip cured so that we will have perfect restoration of function. There is great room for reflection and whether we are all wrong about traction remains to be seen. Those of you who were present at the Cornell clinic saw his ability to take a virgin clubfoot, an extreme case, and within half an hour he and his able assistant, Dr. Mueller, had 'pulped' the foot, so to speak, had rendered it 'like a wet rag.' Dr. Lorenz says that age is no deterrent in the bloodless correction of clubfoot, though when the bones cannot be managed by the hand he uses instruments for their manipulation. He spoke of a case of a man, aged forty-two years, where he had reduced an extreme equino varus, with perfect restoration. If he has done no more good than to show what can be done in clubfoot he is a great benefactor to the profession and to the public."

Dr. Royal Whitman said he had been especially interested in Dr. Lorenz's contention that the anterior displacements—so-called transpositions—that so often followed bloodless operations, were to be classed as incomplete successes, rather than failures, as he had considered them. Recognizing, as he did, that the function in these cases was often greatly improved, he should now be encouraged to persist in maintaining the limb in an attitude of abduction and extension, even when it was evident that anatomical reposition had failed. The result was to be expected in older subjects and Dr. Lorenz even operated with the aim of simply transposing the head of the femur for the purpose of lengthening the limb and improving its functional ability. This treatment, which might be applied in adolescence, or even later, seemed to him a very important advance. Another outcome of this line of work was its application to disabled hip-joints in adults, as Lorenz had advocated recently. To illustrate: He had that afternoon seen a patient who had sustained a fracture of the neck of the femur one year ago. There was non-union, two inches of shortening, and the weak limb was used with the aid of crutches in an attitude of adduction and flexion. He had been able to assure the patient that if under anesthesia the limb were forced into extreme extension and moderate abduction (thus forcing the upper

extremity of the femur forward beneath the anterior superior spine) and were fixed in this attitude by a Lorenz spica he would be able to discard his crutches and that his discomfort and pain would be relieved. He had this confidence because the treatment was based on correct principles and because he had already applied it in a modified form in other cases.

Dr. Reginald Sayre remarked that he voiced the sentiments of all orthopedic surgeons in saying that much had been learned during Dr. Lorenz's visit. After having seen him operate we realized exactly what he did in a way we could not do from reading of his work and methods. He referred to the amount of force which we had seen could be used on the soft parts and thought this could not be realized unless seen. He thought that many who had seen Dr. Lorenz operate realized for the first time that eight to ten months were necessary to retain the parts in position and thought this had a fundamental bearing on Dr. Lorenz's success. The reduction was simply one step in the operation. It was not until he had seen him operate abroad that he understood clearly the amount of strength that should be exerted and realized that his own failures had been due to insufficient force and too short a period of retention in plaster-of-Paris.

Dr. Henry Ling Taylor said the visit of Prof. Lorenz had been the most notable as well as the most picturesque event in the history of orthopedists in America. His procedures had been worked out with little regard for conventional practice, but with astonishing simplicity, directness and thoroughness, and he could not help feeling that his demonstrations would have a profound, lasting and happy effect on American practice. Personally he considered it a rare privilege to have known him and to have seen his work.

Dr. Newton M. Shaffer said he thought Dr. Lorenz had done a great deal for orthopedic surgery. Remembering the days of the elder Sayre, Taylor and Knight, and that America might be called the birthplace of orthopedic surgery, yet there had come to us from abroad a great teacher and one who had taught us. He remarked that many had seen him operate and do what was considered almost impossible. He had, at his clinic, presented to Dr. Lorenz a stubborn, resistant case of congenital clubfoot, expecting to see the Doctor refuse to operate; nothing of the kind occurred, Dr. Lorenz corrected the deformity, as a matter of course. He said that the Lorenz clinic in Vienna had become the Mecca for orthopedists and that yearly Americans were flocking over there.

Dr. Weir, president of the Academy, proposed a resolution that a vote of thanks be offered Dr. Lorenz, which was seconded by Dr. Homer Gibney and unanimously adopted.

The meeting then adjourned and was followed by a reception to Dr. Lorenz.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held Thursday, December 18, 1902.

The President, Robert F. Weir, M.D., in the Chair.

Panama Canal Hygiene.—The first business of the evening consisted of the presentation of resolutions with regard to the hygiene of the construction of the Panama Canal. By unanimous vote a set of resolutions with regard to the health of those engaged in the excavation of the canal were approved and directed to be sent to the President. Attention was called to the fact that hitherto work at Panama has been done with very heavy mortality. Recent discoveries, however, have enabled medical officers to control the ravages of tropical diseases. Especially has this been shown by

American experience in Cuba. It is suggested then that a member of the commission in control of the canal, appointed by the President, should be a medical man and that the amplest powers should be given to medical officers in charge of the sanitation of the canal.

After this a resolution of condolence with the family of the late Dr. Walter Reed, Surgeon U.S.A., was unanimously adopted. Dr. W. W. Keen of Philadelphia suggested that Dr. Reed's well-known services for the sanitation of Cuba had undoubtedly shortened his life and that the wonderful success obtained by his efforts in eradicating yellow fever and lowering the mortality from malaria should be recognized by some lasting and suitable monument. No man of our generation has probably accomplished more lasting good for the race than Dr. Reed by his success in Cuba. His family deserves the sympathy not only of the government, but of the general public of this country, and as Dr. Reed had only his salary to depend on, special efforts should be made to see that his untimely death in the cause of medical science and humanity will not prove a source of suffering for those he leaves behind him.

Symposium on Gall-Stone Surgery.—The first contribution to the symposium was a paper by Dr. George E. Brewer on some practical points in the anatomy of the gall-bladder region.

Position of Gall-Bladder.—While the text-books of anatomy give the normal position and relation of the gall-bladder to the various blood vessels, to the other organs of the abdomen and to the lymph glands in connection with the biliary tract, there are constant variations in all of these particulars that make it impossible for the surgeon to depend on any definite situations in the matter. Especially are there variations in the position of the papilla in the duodenum, through which the gall-ducts empty into the intestine. The practical point for the surgeon to know is that he must be constantly on the look out for anomalous anatomical relations, some of which are of great importance.

The details of this paper will be found in a later issue of the MEDICAL NEWS.

Causes of Gall-Stones.—Dr. A. J. Lartigau said that the discovery of bacteria in the center of gall-stones had opened a new chapter in the etiology of this condition. It is now evident that their origin bears a definite relation to infectious processes. Bile was formerly thought so antiseptic that it would prevent the growth of bacteria. Experiments have shown, however, that not only will bacteria introduced into the gall-bladders of animals, retain their virulence for long periods, but that they will induce calculus formation. According to the report of observations before the French surgical society, the most prominent causative bacteriological factors, the *Bacillus coli communis*, the typhoid bacillus and various forms of staphylococci. Calculus formation is usually due to attenuated bacilli. It used to be thought that foreign bodies of one kind or another, furnished a nucleus for the formation of biliary calculi. When sterile objects of various kinds, however, are introduced into the gall-bladder, even fragments of calculi that are sterilized, no calculus formation results. Cut thread and sutures were introduced with negative results, provided they were sterile on introduction. Complete stagnation of bile, is apparently unfavorable to gall-stone formation.

Personal Investigation.—In a series of observations, Dr. Lartigau has found that pyogenic bacteria, especially the *Bacillus pyocyaneus* and the *Bacillus coli communis* are very little inhibited in their growth when introduced into the gall-bladder. Small stones result

from their presence in six weeks and large stones in from six to nine months. No special microbe is necessary but many different kinds of ordinary pathogenic bacteria produce biliary calculi. Sometimes intestinal bacteria invade the gall-bladder. A mixed infection, that is the introduction of several varieties of bacteria, will not produce more biliary calculi nor cause their formation sooner than simple infection. With regard to foreign bodies, they do not, when sterile, become coated with bile salts, unless, as the irritative result of their presence, colon bacilli find their way into the gall bladder, from the digestive tract or the bladder.

Dr. Lartigau has demonstrated that certain toxic products of bacteria will of themselves serve to cause the deposition of biliary salts which leads to the formation of gall-stones. If bacteria growing on culture media are enclosed in celloidin sacs the formation of gall-stones will result, quite as if the bacteria were free. In these cases the celloidin sacs, being somewhat porous, allow the escape of bacterial products mingling with the bile, causing chemical precipitation in the bile ducts. Colon bacilli are apt to form large gall-stones. *Bacilli pyocyaneus* cause the formation of small calculi. The introduction of tubercle bacilli is not always followed by calculus formation, but sometimes they favor calculous disease.

Route of Infection.—The usual route of infectious micro-organism from the digestive tract is through the blood stream. During the heat of digestion it is not an unusual thing for micro-organisms to find their way into the portal circulation. Adams and others have shown that micro-organisms fed to animals may be demonstrated in the liver circulation. At times infection seems to take place from the digestive tract. This is not as common as used to be thought. It is probable that presence of irritative conditions of various kinds, congestion or interference with the flow of bile by enlarged lymph glands, may predispose to conditions in the duodenum, which cause reflux of intestinal contents into the bile ducts, and hence set up infectious processes in the gall-bladder. It must be remembered that even dead bacteria are not inert bodies, but may possess in themselves certain chemical substances that will cause chemical changes in the bile.

Diagnosis of Gall-Stones.—Dr. J. B. Murphy of Chicago said that seven to twelve per cent. of all autopsies show the presence of gall-stones. Not more than ten per cent. of such persons have any symptoms from their gall-stones. There must be some disturbance of the stone which causes it to irritate the gall-bladder or to become caught in the bile duct before symptoms are noted. This acute exacerbation of the cholelithiasis is probably due to a secondary infection, either from the digestive tract through the portal circulation, or through the bile ducts, the papilla in the duodenum not closing so firmly because of the irritation of the presence of the gall-stones. We know now that bacteria are needed for cholesterolin formation and most gall-stones are mainly composed of this substance. After its formation secondary infection sets up an acute catarrhal inflammation, with an increase of mucous secretion, and this causes movements of the stone until it finds its way into the bile ducts.

Symptoms of Gall-Stones.—Dr. Murphy said that the usual symptoms of the presence of gall-stones are very characteristic. There is severe cutting pain in the region of the gall-bladder, referred not seldom to the shoulder followed by intense collapse and vomiting. There are a number of anomalous symptoms, however, and their connection with gall-stones is often entirely ignored. In about 90 per cent. of all cases of gall-stones that come for operation there is a history of a

series of attacks of gastralgia. These attacks are evidently due to irritative conditions set up by the presence of the gall-stones. A repetition of gastralgic symptoms should arouse suspicion of the presence of a gall-stone.

Virulence of Symptoms.—As a rule an attack of gall-stone colic is a benign affection followed by complete and rapid recovery. The younger the patient, however, the more danger there is that the attacks will prove serious. In a patient recently operated upon, 62 hours after a first attack of gall-stone colic followed by intense depression, from which there was no reaction; gangrene of the gall-bladder was found and only prompt operation saved the patient's life. Gall-stones are not as dangerous as appendicitis and yet it must not be forgotten that fatal perforation of the gall-bladder or the gall-duct may take place and the surgeon's attitude in these cases must be constantly one of armed expectancy.

Temperature Charts.—In the absence of other characteristic signs of gall-stones it must not be forgotten that the temperature chart of a patient suffering from cholelithiasis may prove of itself sufficiently characteristic to enable the surgeon to make a diagnosis from it alone. There is apt to be a rapid ascent of the temperature and then a rather sharp angle in the chart, with almost as rapid descent, almost to normal, followed after a day or so of intermission by another febrile attack. The intermittency is always irregular. These temperature anomalies may succeed one another for ten days to two weeks at uneven intervals, and then not recur for from three to nine months. Then they may occur once more. In one case Dr. Murphy has known them to be absent for several years, yet recur afterward.

Illustrative Case.—In a case recently operated upon in Los Angeles, Cal., the patient had had such intermittent attacks for eleven years. There was never any colic, no history of pain, nor biliary disturbance or jaundice. The region of the gall-bladder was sensitive to deep pressure, but not markedly so. The stone was found in the beginning of the common duct and was removed on operation. The next day the patient had another attack of fever. Then a tube was put in, thoroughly draining the biliary tract, and there were no more febrile attacks.

Dr. Murphy's complete paper will appear in a subsequent issue of the *MEDICAL NEWS*.

Present Status of Biliary Surgery.—Dr. W. S. Mayo of Rochester, Minn., said that appendiceal and gall-stone surgery have certain similarities, but they differ in this that while the chronic appendicitis is always dangerous and seldom fails to give symptoms, many gall-stones slumber for years, some of them indeed for life, without a sign of their presence. It is calculated that about 2,000,000 Germans have gall-stones. Of these only about 100,000 have any symptoms from them. In general, it may be said that nearly ten per cent. of the population have gall-stones, but only about five per cent. of those that have gall-stones have symptoms from them.

This paper will appear in a subsequent issue of the *MEDICAL NEWS*.

Typhoid Bacilli, the Corset and Gall-Stones.—Dr. W. W. Keen of Philadelphia said that the typhoid bacilli may persist for many years after convalescence from typhoid fever, and that there are three favorite lurking places, the bone marrow and the spleen and the gall-bladder. He has found typhoid bacilli in pure culture in a bone abscess thirty years after an attack of typhoid fever. Undoubtedly typhoid bacilli constitute an important element in the etiology of gall-stones.

There are other factors, however, that must not be forgotten. Women suffer from gall-stones four times as often as men. It is evident then that besides infection, interference with the circulation, such as is caused by the corset, may be a predisposing influence in the production of gall-stones. With regard to the prognosis of gall-stone surgery, Dr. Keen considers that the coagulation time of the blood is an important element. In a recent case by the administration of calcium chloride, he was able to reduce the coagulation time of the blood from 15½ minutes to 8 minutes. The dose given was five grains three times a day, Mayo Robson sometimes gives sixty grains three times a day.

Mortality after Operations.—Dr. Munro of Boston said that it must not be forgotten that deaths after gall-stone surgery may be due to other causes than some defect of technic during the operation or some fault of aseptic precautions. In a recent case of a young woman who had never menstruated, but who had suffered from what seemed to be ovarian pain was operated upon. It was not definitely decided before operation whether the ovary or the appendix would be found diseased. What was found was an immensely enlarged gall-bladder, whose fundus was in the appendiceal region. The pressure and perhaps some infection had caused gangrene of the biliary tissues and peritonitis, which resulted fatally. At the autopsy it was found that the thymus gland was persistent, that there was hypoplasia of the aorta, an undersized uterus and that general lymphatic enlargement which has now come to be known as the *status lymphaticus*. The bacterial examination was negative. It would seem that the enlargement of a gland in the hepatic region had perhaps interfered with the flow of bile and caused the distention and gangrene of the gall-bladder, the young woman being predisposed to death by her *status lymphaticus*.

BOOK REVIEWS.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE FOR THE USE OF PHYSICIANS AND STUDENTS. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University; Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, etc. Tenth Edition. P. Blakiston's Son & Co., Philadelphia.

THE fact that this manual has been found to be of great practical value to the medical profession can be proven in no more conclusive way than by saying that over 25,000 copies have been published since the book first appeared. In order to maintain it as an exponent of the latest methods of clinical examination new editions have been frequently necessitated and it has just now passed through its tenth revision.

Numerous additions and corrections have been made, but in order that the student or busy practitioner should not be made to wade through numerous obsolete theories and methods considerable material has also been cut out. The significance of the various tests in their relation to pathological lesions is especially dwelt upon and an earnest endeavor to make it a thoroughly modern book seems to have been realized.

THE ISLE OF CONTENT. By GEORGE F. BUTLER, M.D. Erudite Press. Concord, Mass.

A CHARMING and artistic book, by George F. Butler, M.D., lies before us, bearing a suggestion of the poetic and beautiful thoughts that may come to so busy and scientific a man as its author.

The Isle of Content shows a beautiful bit of book work, which is worthy of the significant phantasy that introduces it, and gives it its name, as well as the other "Waifs of Thought" that fill its pages.

There is a delicate personal touch about the book, hinting at the close companionship between the daughter who collects and edits these selections from her father's writings, and the well-known man who has time, in spite of his responsibilities, for outdoor love and life.

The fragments are often as suggestive as fully developed essays, and while by no means medical in their tendency, nevertheless could only be written by a medical man. They embody thoughts that go hand in hand with deep experiences in life, experiences that if touched delicately will reverberate in harmony with other thoughts. It is in this very delicacy that the charm of expression lies, for in this collection of poems and fragments with a few choice illustrations there is breathed a broad sympathy for what is true and beautiful, and a tender understanding of what is sad and wrong in life.

Though miscellaneous and unrelated these little literary paragraphs might appear at first sight, yet to those who know the solid background of work that has established their author's reputation, they read collectively as the experience of the over-soul that is not touched by work and care.

A MANUAL OF DISSECTION AND PRACTICAL ANATOMY. Founded on Gray and Gerrish. By WILLIAM T. ECKLEY, M.D., and CORRIE B. ECKLEY. Lea Bros. & Co., Philadelphia.

As the preface of this book states, its purposes are to provide the student with a detailed guide for dissection, and to answer the requirements of the physician and surgeon for review of the anatomy of any region.

The means of carrying out this rather broad purpose are, briefly, well-presented and carefully edited matter, whose advantageous features in these particulars are reinforced by a large number of very valuable plates and diagrams, and a long series of tabulations, which aim to give those features which are the most difficult to remember, and at the same time very likely to be required in the review of an important region prior to operation.

The department of the book which fulfils this feature most perfectly is that devoted to the vascular system, where, in tabular form, are given the main arteries and their branches, and each table is accompanied by a clear diagram, showing how and where the various branches are given off from the parent trunks. This is certainly an admirable feature, especially when it concerns vessels that are familiarly present in the surgical fields, and yet whose details cannot be easily remembered. Where an important surgical landmark, for example, Poupart's ligament, crosses the vessel, a dotted line is placed. At points where large trunks pass through openings, for example, the lower arch in the great abductor muscle in the thigh, a circle is placed about the vessel. Points of corresponding importance in the other departments of anatomy are similarly well elucidated, and this book doubtless will meet with the favor of all who need such manuals.

GYNECOLOGY—OBSTETRICS—MENOPAUSE. Parts I, II, and III. Being a revised and enlarged reissue of three serial articles appearing in *The Medical Council*. By A. H. P. LEUF, M.D., author of "Practical First Principles" and Associate Editor of *The Medical Council*, Medical Council, Philadelphia.

A FEW admiring friends have evidently got together and decided that their idol must not die, but live on forever in his writings. Doubtless, induced by the flattery of these, the writer has prepared this olla podrida

for their edification, convinced that others also will glean choice bits of refined knowledge from his sage and philosophic remarks.

The gloom pervading the whole "essay" makes one shudder at the unkind fate that created lovely woman. Marriage is a failure and dooms womankind to all sorts of untold horrors. No hope is held out to the unfortunate wife who may develop a disorder of her reproductive organs. All men are beasts and have no consideration for their wives, but willingly condemn them to suffer on until the kindly hand of death is stretched out to them and they pass on to "that bourn whence no traveler returns."

The chapter devoted to the use of pessaries is both amusing and instructive. The author is still an ardent advocate of the old and discarded stem-pessary. The possibility of serious infection of the uterine mucosa is dismissed with but little ceremony, as if it were not worthy of consideration.

The much-respected "post-partum abdominal binder" and its many advantages are highly condemned by the writer as senseless and injurious. With such ideas the average obstetrician will take issue.

In spite of this rather severe criticism of Dr. Leuf's book, there is much of practical value in its pages, and many practitioners will be benefited by the reading of the volume.

The presswork on the book is much below the average, and is scarcely worthy of its contents. It looks cheap, and doubtless is so.

A TEXT-BOOK OF THE SCIENCE AND ART OF OBSTETRICS.

By HENRY J. GARRIGUES, A.M., M.D., Consulting Obstetric Surgeon to the New York Maternity Hospital; Gynecologist to St. Mark's Hospital; Prof. of Obstetrics in the Post-Graduate Medical School (retired); Prof. of Obstetrics in the School for Clinical Medicine (retired); etc. With 500 illustrations. J. B. Lippincott Company, Philadelphia and London.

THE publication of a text-book by such a well-known man as Dr. Garrigues would in itself create a stir in the medical world. As one of the pioneers in the field of obstetrics in this country his work has more than helped to put the subject on a true scientific basis on this side of the Atlantic. Having spent so many years in the study of Midwifery no one should be better qualified to present the subject to the student as well as to the practitioner. The author has given us all the results of his excellent and mature judgment in the pages of this volume.

Great care has been taken to present the many and varied problems of Obstetrics in as simple and yet concise a manner as is consistent with thoroughness and completeness. All tiresome and space-filling detail is omitted; or the reader is clearly told where it can be found.

Doubtless, many will take issue with the ideas that are set forth in the treatment during the puerperium, but from the author's standpoint the reasons are most logical and conclusive. Certainly the experience that he has had with his methods, and the uniform good results they have produced in his practice, would seem to justify all that he has claimed for them.

In this day of obstetrical book production, originality of form and arrangement would be difficult for even so ingenious and fertile a mind as the author's; but the plan of the book is excellent and easy of handling.

It is refreshing to find so many new and good illustrations as are here given us. They are both many and applicable. They will prove a source of increased facility in the clearer understanding of the contents of the text.